NEW

BOOK OF THE
RENAISSANCE

Explore the legendary era and how it re-shaped culture throughout Europe

From da Vinci & Raphael to Michelangelo & Botticelli

From the makers of ALL ABOUT HISTORY

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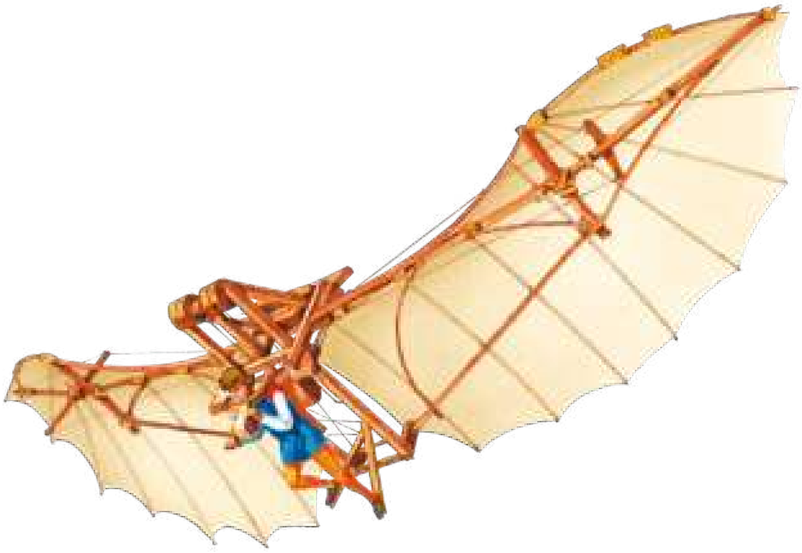

Welcome to

ALL ABOUT HISTORY

BOOK OF THE
RENAISSANCE

Between the 14th and the 17th centuries a cultural, political, scientific and intellectual explosion took place. Emanating from the workshops of Florence, Europe's cultural rebirth gradually spread throughout the continent and took hold. We call it the Renaissance, meaning "rebirth" or "reawakening". At the time, European intellectuals were looking back to the philosophers, writers and artists of the Classical Greek and Roman periods in a quest to recapture what they saw as the beauty and purity of ages gone by. The All About History Book of the Renaissance investigates the events that led up to the movement, from the rise of the Medici family in Florence to the invention of the Gutenberg printing press. Delve into the lives and livelihoods of the Renaissance's key players, from Michelangelo, nicknamed The Divine, to the scandalous hell-raiser Caravaggio. Uncover the stories behind the most famous masterpieces, such as the *Mona Lisa* and the ceiling of the Vatican's Sistine Chapel, and find out how they were painstakingly created. Trace the expansion of the Renaissance throughout the continent and discover how its effects still resonate today, from Columbus making land in the New World to the theory of heliocentrism.

FUTURE

BOOK OF THE
RENAISSANCE

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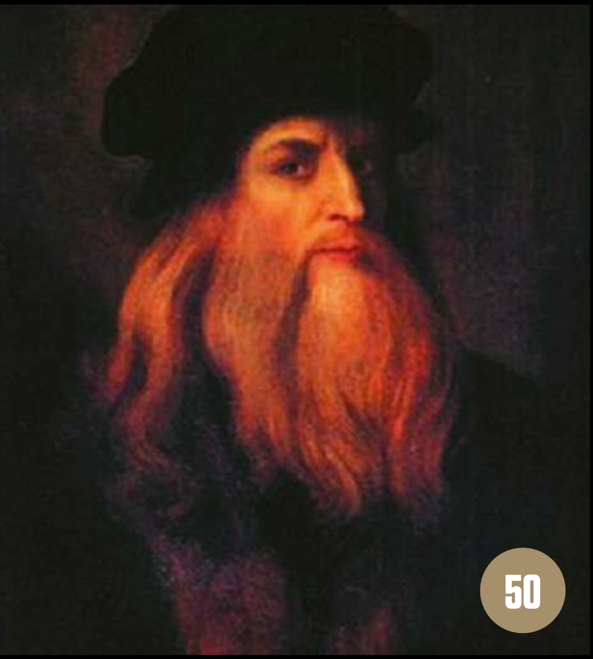

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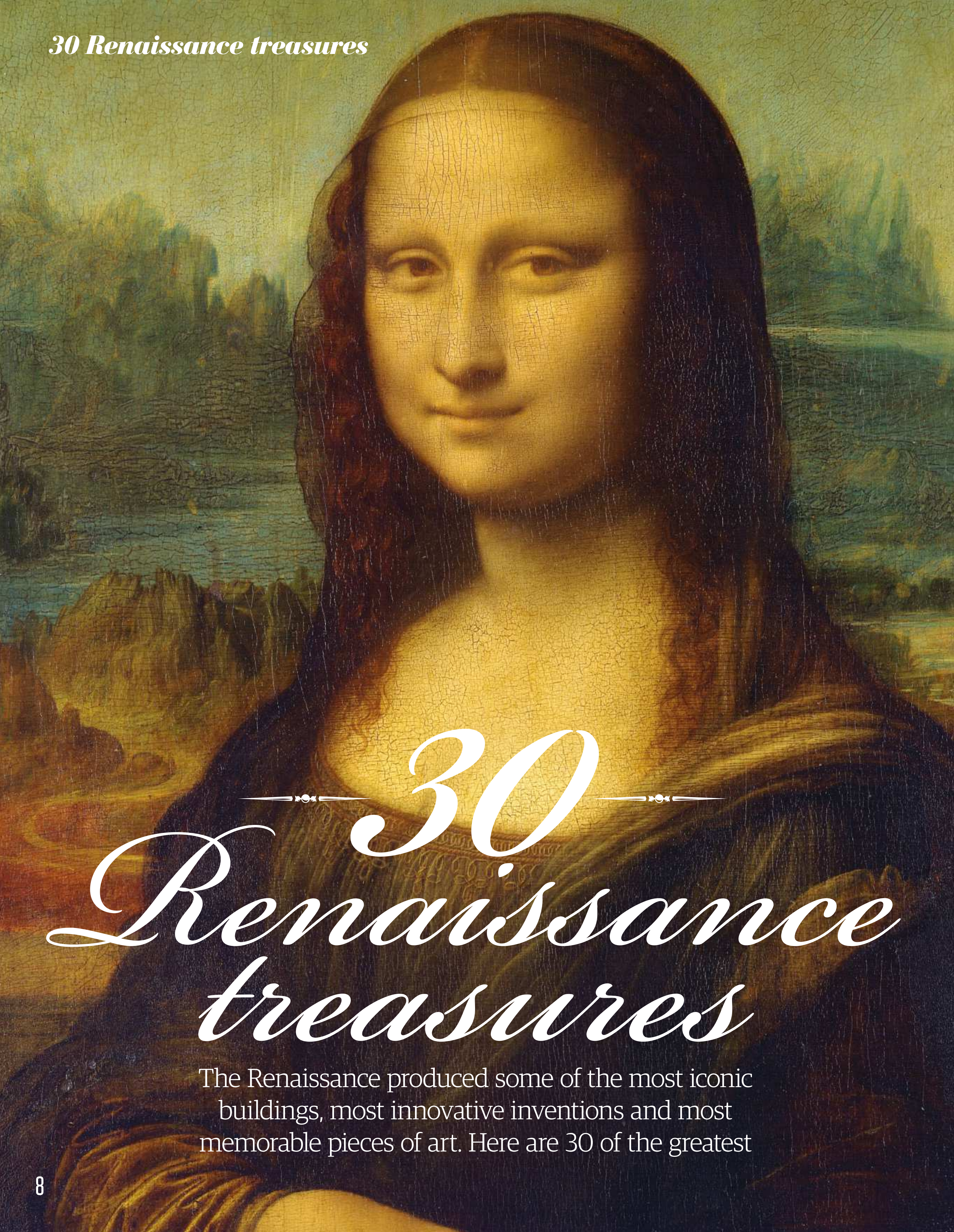

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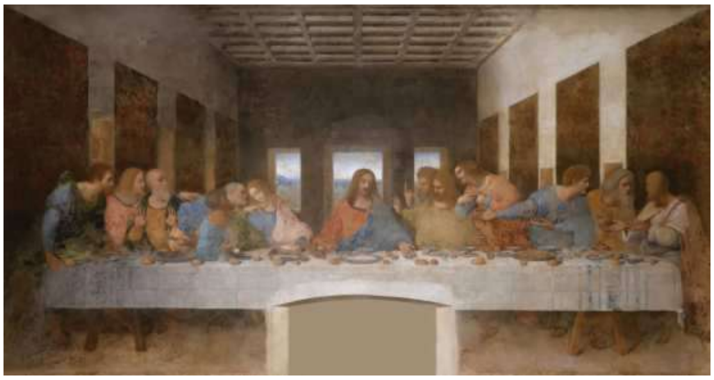
Renaissance treasures

The Renaissance produced some of the most iconic buildings, most innovative inventions and most memorable pieces of art. Here are 30 of the greatest

The Last Supper CREATED 1496

One of the most famous works by Renaissance artist, Leonardo da Vinci, *The Last Supper* is a mural that adorns the refectory of the Convent of Santa Maria delle Grazie in Milan. Originally commissioned as part of planned renovations to the church and its convent buildings by Ludovico Sforza, the Duke of Milan, work commenced c.1496 on the artwork, that measures 180 x 350in. The image depicts the scene of the Last Supper of Jesus Christ with his disciples, as told in the Gospel of John (13:21), and shows the dismay among the disciples when Jesus announced that one of them would ultimately betray him.

To get the level of detail that he required, da Vinci painted *The Last Supper* on a dry wall rather than wet plaster, which was the norm with fresco paintings, and went so far as to add an undercoat of white lead to the surface to enhance the brightness of the oil and tempera applied on top. Sadly, due to the methods used, very little of the original painting remains today, despite the numerous restoration attempts.

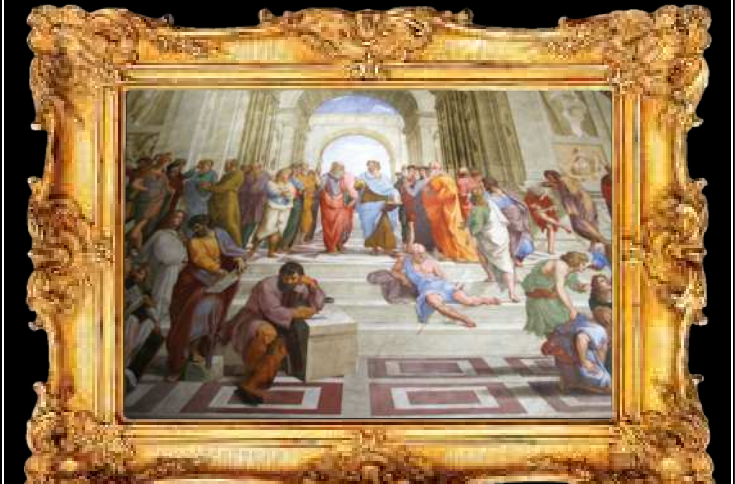


> "Due to the methods used, little of the original painting remains, despite numerous restoration attempts"

School Of Athens CREATED 1509-1511

Considered by many to be the perfect embodiment of the classical spirit of the Renaissance, *The School Of Athens* by Italian artist Raphael formed part of a commission to decorate rooms of the Apostolic Palace in the Vatican. The image is one of a group of four main fresco murals on each wall of the Stanza della Segnatura that depict different areas of human knowledge (religion, poetry, law) and, as represented by *The School Of Athens*, philosophy. The theme of each mural is identified with a separate tondo (circular artwork) situated above the main piece. The tondo above *The School Of Athens* reads, '*Causarum Cognitio*', which means 'seeking knowledge of causes' and appears to echo Aristotle's belief that the sign of wisdom is knowing why.

Though it is largely believed that nearly every great ancient Greek philosopher can be found in the mural, actually determining which one is which has proved challenging, especially as Raphael had to come up with new ways to allude to figures for whom there were no traditional visual representations. Socrates, in green robes near the middle of the painting, is recognisable from numerous classic busts, but for other figures a knowledge of Greek philosophers is required to interpret the gestures and link them to their ancient counterparts.

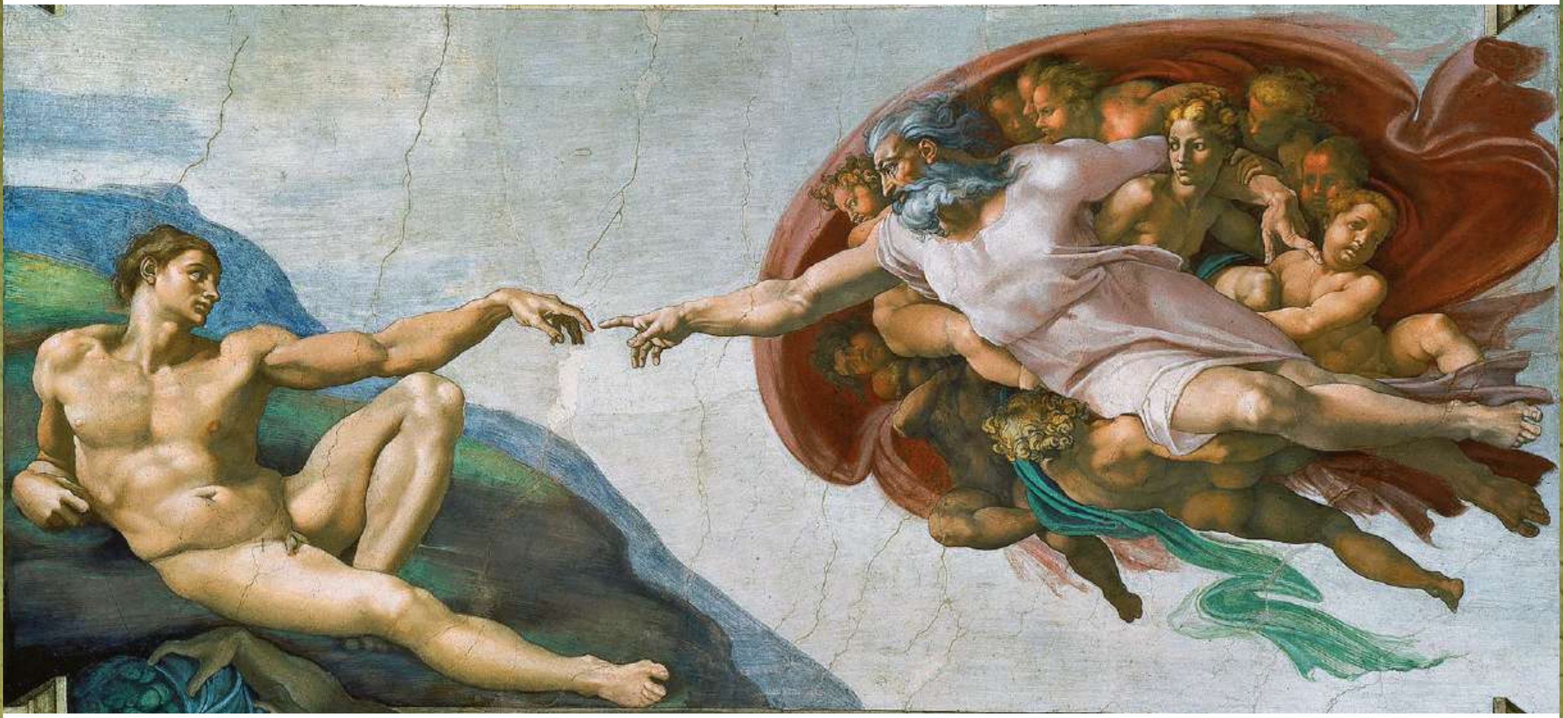


Biblioteca Marciana CREATED 1537

Situated in Venice in northern Italy, the Biblioteca Nazionale Marciana (National Library of St Mark's) is one of the earliest surviving manuscript depositories in the country and holds one of the world's greatest collections of classical texts. Originally designed by Jacopo Sansovino, work commenced on the building in 1537 and continued right through until his death in 1570. Aside from the first 16 arcade bays, frescoes and other ornamental designs, the building remained in an incomplete state until 1588, when the last five bays were finished by Vincenzo Scamozzi, staying true to Sansovino's original design.

Like the British Library, a law passed in 1603 required that a copy of every new book was deposited at the Marciana and with the fall of the Venetian Republic in 1797, all of the manuscripts and books from the religious houses that were suppressed under the Napoleonic regime were moved there. Today the Marciana houses about 1 million books, 13,000 manuscripts and thousands of other documents and works of great historical significance.

Creation Of Adam by Michelangelo CREATED c.1508-1512

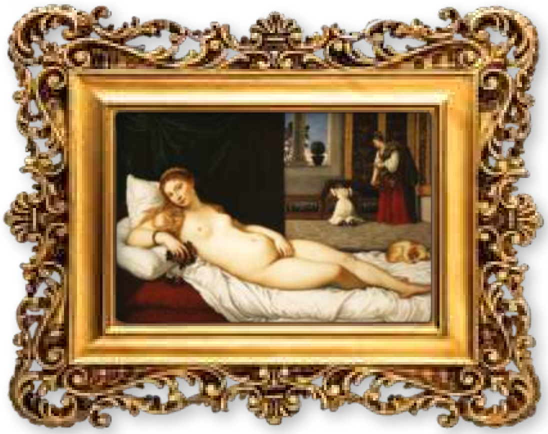


Another instantly recognisable piece of Renaissance artwork, *The Creation Of Adam* forms part of the ceiling in the Sistine Chapel in the Apostolic Palace. Created using the fresco method of painting onto freshly laid lime plaster, water allows the pigment to merge with the plaster so that when it sets, the painting becomes an integral part of the wall. The mural illustrates the Biblical creation narrative from the Book of Genesis in which God creates man in the form of Adam. In the composition, God is depicted as a white-haired old man reaching out to give life to a naked Adam. It has also been speculated that the more feminine figure protected by God's left arm is actually Eve. The image of the near-touching fingers of man and his creator, along with Leonardo da Vinci's *The Last Supper*, has become one of the most replicated religious paintings of all time with countless imitations and parodies cropping up throughout the years.

Venus Of Urbino

CREATED 1538

Currently hanging in the Galleria degli Uffizi in Florence, the *Venus Of Urbino* is an oil painting by Titian that features the goddess Venus removed from traditional godly surrounds and placed in a more domestic environment. Reclining on a bed and staring directly at the viewer, Venus appears unconcerned by her nudity and in one hand she holds a posy of roses while the other is casually placed across her genitals. In the background two maids can be seen rummaging through a chest, perhaps in search of clothes. The painting was commissioned by Guidobaldo II della Rovere, the Duke of Urbino, apparently as an instructive model for the young bride he married in 1534. The sleeping dog in the background is often a symbol of fidelity, which would therefore add weight to this notion.



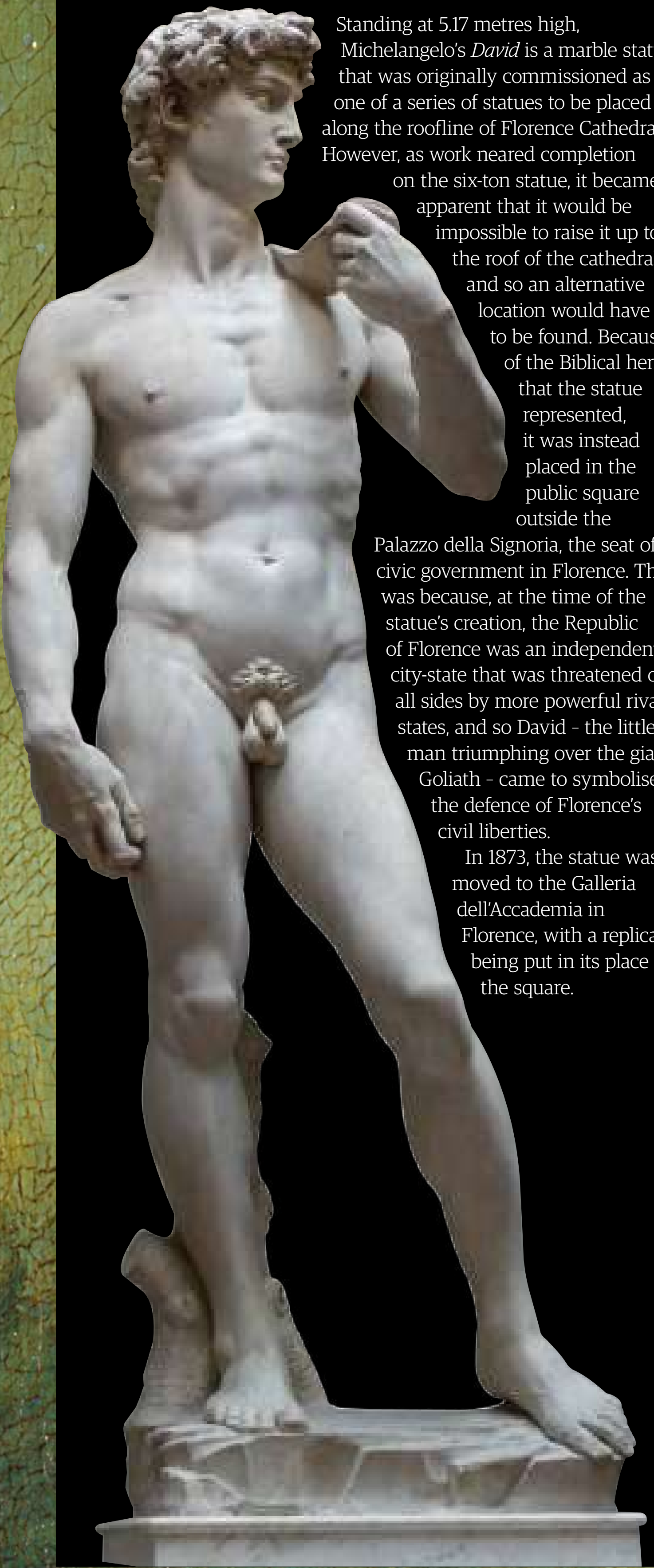
Renaissance clock

CREATED 1400s

The word 'Renaissance' usually conjures up images of fine art and breathtaking architecture, but many great conveniences were also invented during this period, such as the printing press and the mariner's astrolabe, which are showcased elsewhere in these pages. Arguably the most significant invention to come from this time, though, and one we still use on a daily basis, is the clock.

Before the advent of the clock, time was kept by sundials, which, although accurate, largely depended on the weather, and later water clocks, which required constant monitoring and were therefore impractical for casual timekeeping. Although the first example of what is considered a clock was built in England in 1283, the need to make clocks smaller led to the creation of the spring-driven clock in the 15th century, which allowed timekeeping to take place within the home and gave Renaissance artisans the opportunity to unleash their artistic, not to mention technical, talents.

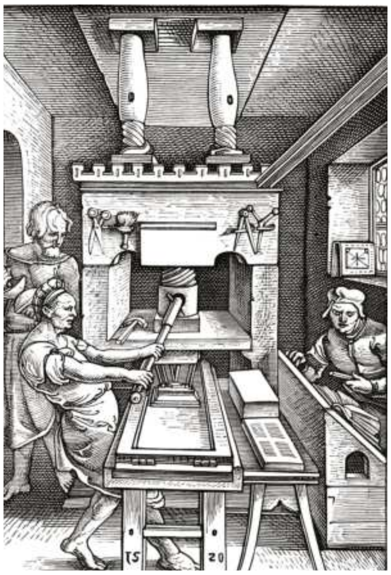
David CREATED 1501-1504



Standing at 5.17 metres high, Michelangelo's *David* is a marble statue that was originally commissioned as one of a series of statues to be placed along the roofline of Florence Cathedral. However, as work neared completion on the six-ton statue, it became apparent that it would be impossible to raise it up to the roof of the cathedral and so an alternative location would have to be found. Because of the Biblical hero that the statue represented, it was instead placed in the public square outside the Palazzo della Signoria, the seat of civic government in Florence. This was because, at the time of the statue's creation, the Republic of Florence was an independent city-state that was threatened on all sides by more powerful rival states, and so David - the little man triumphing over the giant Goliath - came to symbolise the defence of Florence's civil liberties.

In 1873, the statue was moved to the Galleria dell'Accademia in Florence, with a replica being put in its place in the square.

The printing press CREATED c.1440



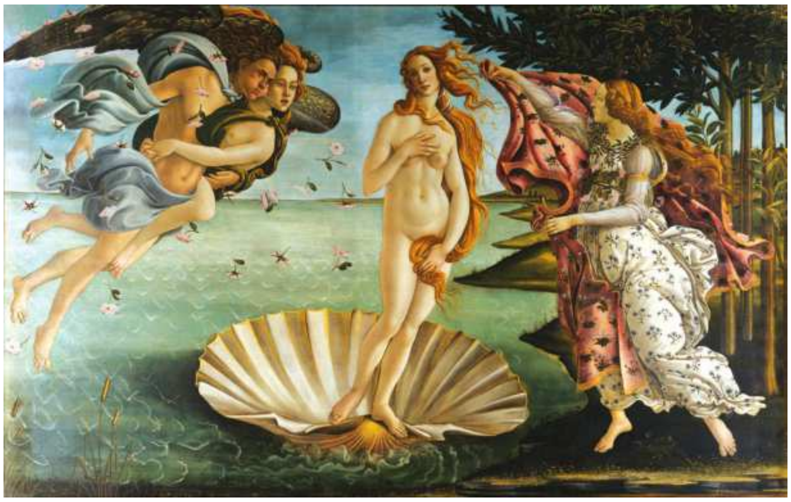
The invention of the printing press by the German Johannes Gutenberg, was one of the most influential events in the second millennium that revolutionised the way in which people conceived and described the world they live in. Gutenberg's invention was based on existing screw presses and adapted existing technologies to perfect the printing process. By devising a hand mould, the precise and quick composition of movable metal type was made possible in large quantities, which was a key element in the overall profitability of the enterprise.

The arrival of the printing press had a profound effect on Renaissance Europe and introduced an era of mass communication in many different languages. It meant that information could be easily circulated and the power of political and religious authorities could be challenged by the masses. Within a few decades, printing presses were becoming widespread in cities throughout Europe and by 1500, they had produced more than 20 million volumes.

The Birth Of Venus CREATED 1482-1485

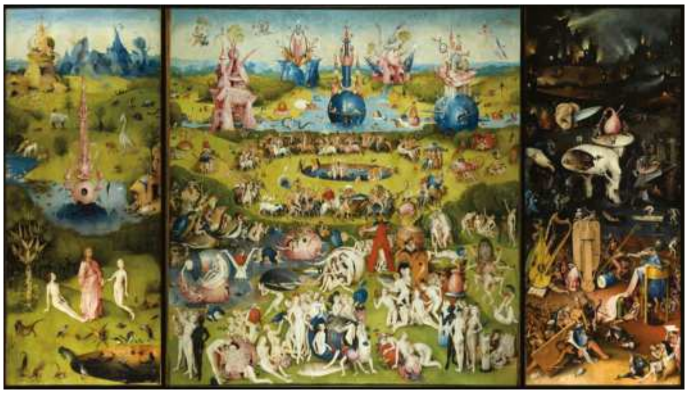
Painted in the 1480s by Sandro Botticelli, *The Birth Of Venus* depicts the goddess Venus emerging from the sea as an adult woman. The theme comes from *Metamorphoses*, a Latin narrative poem by the Roman poet Ovid, that chronicles the history of the world by blending history with mythology. In the painting, Venus can be seen standing in a shell that is being blown into land by Zephyr, the god of the west wind. Waiting for Venus on the shore is Horae, goddess of the seasons, who holds a cape ready to clothe the newborn deity. A fourth figure can be seen being carried by Zephyr, but it is not entirely clear if this is an Aura (wind nymph) or Chloris, a nymph associated with spring and the blossoming of flowers (the roses being blown towards Venus may suggest this is the case).

The painting is on canvas, which was unusual for the time, as the trend was to paint on wood panels. The piece measures roughly 1.8 x 2.7m and it currently resides in the Uffizi Gallery in Florence, Italy.



The Garden Of Earthly Delights

CREATED 1490-1510



The Garden Of Earthly Delights is a triptych by Dutch artist Hieronymus Bosch that dates from between 1490 and 1510. Painted in oil onto oak panels, the artwork comprises of a square middle panel flanked by two rectangular wings that close over the middle panel like shutters. When shut, the exterior panels show the world during its creation. When unfolded, the three inner panels display, from left to right, God presenting Eve to Adam; a thriving scene depicting humans and animals; and hellish scenes of damnation.

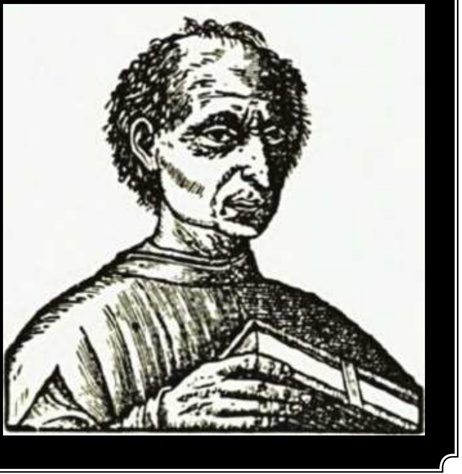
The meaning behind the triptych has been heavily debated – some interpret it as a warning to the perils of life's temptations, others perceive it to be a testament to paradise lost.

The Prince

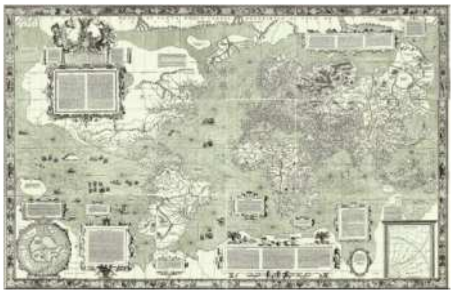
CREATED 1513

The Prince is a political treatise by the Italian diplomat and political theorist Niccolo Machiavelli and it sent shockwaves through Europe when it was published in 1532 by detailing ruthless tactics for gaining absolute power at the abandonment of conventional morality. Written in Italian rather than Latin, which was considered innovative at the time, *The Prince* describes how princes can justify their aims, such as glory and survival, by immoral means and, as such, Machiavelli came to be regarded as something of an agent of evil and his name has become synonymous with unscrupulous cunning and deception.

Though relatively short, *The Prince* is the most famous of Machiavelli's works and considered one of the first works of modern political philosophy. Its chapters cover topics such as generosity versus parsimony and cruelty versus mercy, and the treatise had a profound impact on political leaders throughout the modern west, where the advent of the printing press meant it was catapulted into political consciousness.



> "The exterior panels show the world during its creation"



The Mercator map

CREATED 1569

The Mercator map is a cylindrical map projection presented by the Flemish geographer and cartographer Gerardus Mercator. It quickly became the standard map projection for nautical purposes as it presents all rhumb lines as straight segments rather than arcs that reflect the true spherical form of the Earth. This linear scale is equal in all directions around any point, so that the angles and shapes of small objects are preserved, but the size of the objects becomes distorted as the latitude increases from the Equator to the poles, where the scale becomes infinite. This leads to a distorted perspective of the world with some landmass appearing to be much larger than they actually are.

Mercator's original version was a large-scale planisphere measuring 2.02 x 1.24m and was printed on 18 separate sheets. Such was the common usage of Mercator's projection that it led many to believe that islands further away from the Equator were far less significant, in terms of size, than they actually were.

Equestrian Statue Of Gattamelata

CREATED 1453

Located at the Piazza del Santo in Padua, Italy, the *Equestrian Statue of Gattamelata* is a sculpture by Renaissance artist Donatello that depicts the mercenary leader Erasmo da Narni, known as 'Gattamelata', riding a horse. In the 13th and 14th centuries, the Italian city-states of Venice, Florence and Genoa were wealthy through trade, yet lacked significant armies to protect all of that wealth. So the nobles hired extra muscle in the form of mercenaries (or 'condottieri') to help protect them.

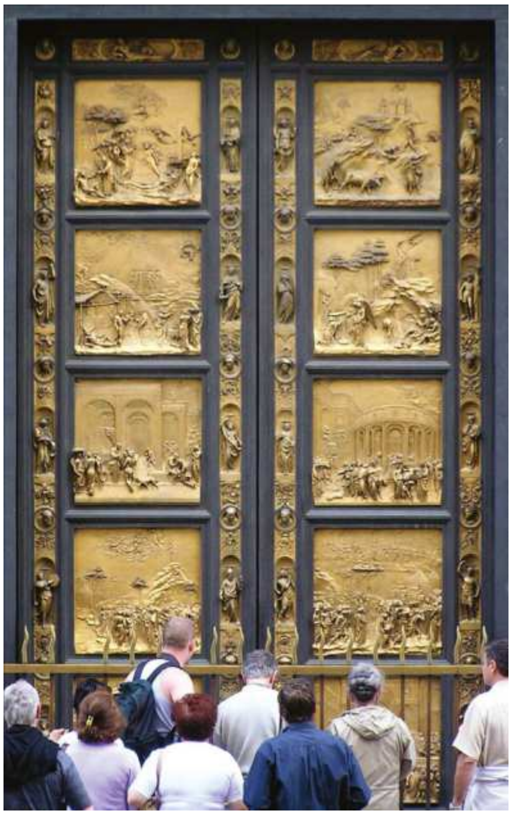
After Erasmo's death in 1443, the Republic of Venice commissioned a statue in his honour. Measuring 3.4 x 3.9m (with a base measuring 7.8m x 4.1m), it is the earliest surviving example of a Renaissance equestrian statue and the first to introduce such a such a grand pose from the horse – a pose that would be replicated countless times in the future in statues honouring military heroes. Keeping the man and his steed in normal life size, rather than making them larger than life, Donatello instead used emotion, position and symbolism to project Erasmo's power.

The Gates of Paradise

CREATED 1425-1452

So-called by Michelangelo, the Gates Of Paradise are the bronze doors of the Florence Baptistery that were designed and created by the Italian artist Lorenzo Ghiberti. The project was a young Ghiberti's first claim to fame as the then 23-year-old came first in a competition to design the first set of bronze doors (Brunelleschi was the runner-up). The original plan was that the doors would depict scenes from the Old Testament (a trial piece depicting the sacrifice of Isaac remains) but this was changed so that the doors would instead depict scenes from the New Testament.

To complete this commission, Ghiberti set up a large workshop where many artists trained, including Donatello, Masolino and Michelozzo. When his initial set of 28 panels was complete, he was then commissioned to produce a second set for another set of doors within the church, this time comprising of ten rectangular scenes from the Old Testament, as per the original brief.



"Ghiberti set up a large workshop where many artists trained"

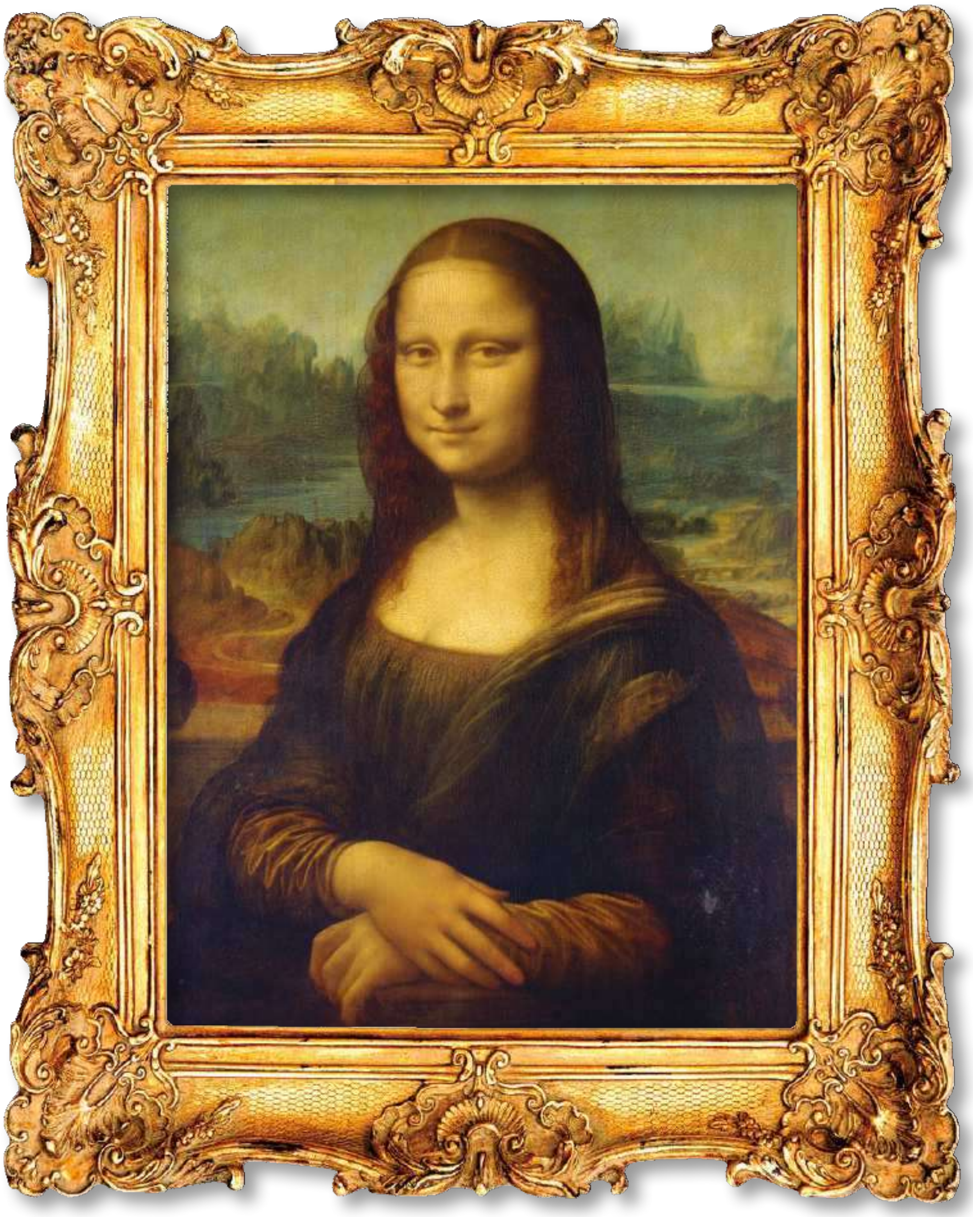
The Mona Lisa

CREATED 1503-1506

The Mona Lisa by Leonardo da Vinci is perhaps the world's most famous painting. It's difficult to think of another piece of artwork that has been scrutinised, analysed, talked about and written about to quite the same degree as this one and the fact that it is instantly recognisable, means that it has remained in the public consciousness and been parodied more than any other piece of art in the world.

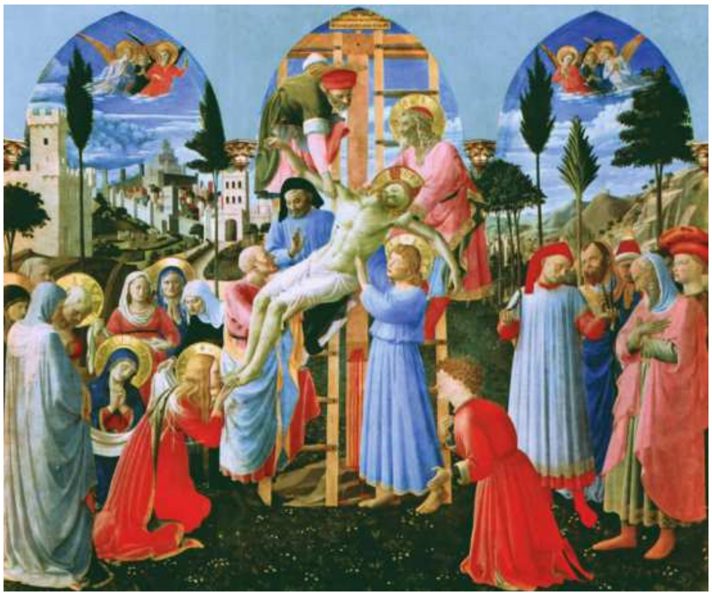
But however famous the portrait is, the true inspiration behind that famous half-smile has never been truly ascertained. Some believe that the model was da Vinci's own mother, Caterina, or Princess Isabella of Naples, or a Spanish noblewoman named Costanza d'Avalos. Some even suggested that da Vinci based the portrait on his own likeness – due to the subject's slightly masculine facial features. Perhaps the most plausible answer came from art historian, Giorgio Vasari, who suggested that the model was, in fact, Lisa Gherardini del Giocondo, a wealthy silk merchant's wife and mother of five children. This theory was backed up by the recent discovery of a 500-year-old note by one of da Vinci's acquaintances which stated that the artist was working on Lisa's portrait.

The painting was eventually acquired by King Francis I of France and is now the property of the French Republic. It has remained on permanent display at the Louvre Museum in Paris since 1797 where it continues to attract huge crowds and remains one of the most visited artworks in the world.



Deposition From The Cross

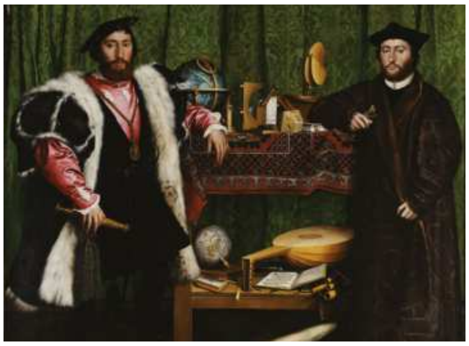
CREATED 1437-1440



Housed at the National Museum of San Marco in Florence, the *Deposition From The Cross* by Italian Renaissance painter Fra Angelico, represents the Gospels' accounts of Joseph of Arimathea and Nicodemus of taking Christ down from the cross after his crucifixion. The piece had already been started by Lorenzo Monaco for the Strozzi Chapel in the Florentine church of Santa Trinita - the use of bright colours is characteristic of Monaco, such as the *Coronation Of The Virgin*. However, following Monaco's death around 1425, Fra Angelico stepped in to finish the piece.

In the painting, a limp Christ can be seen being supported by several people, including Mary Magdalene kissing his feet - a symbol of repentance - and a figure on the right wearing a red hat can be seen holding the nails from the cross and the crown of thorns, the symbols of passion and sacrifice.

> "The use of bright colours is characteristic of Monaco"



The Ambassadors

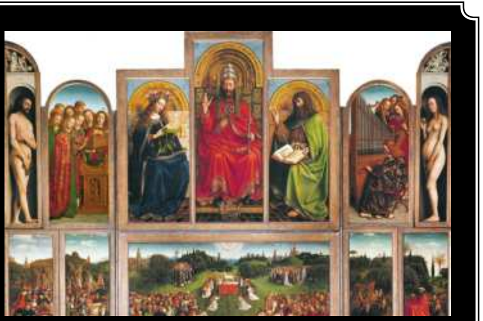
CREATED 1533

Painted by Hans Holbein the Younger, a German artist who spent most of his time in England, *The Ambassadors* is a double portrait featuring the full figures of landowner Jean de Dinteville and Georges de Selve, the Bishop of Lavaur, as well as several objects. The painting also features an anamorphic skull in the lower portion that viewers can only see by standing in a specific vantage point. To reconstitute the image of the skull, viewers must approach the painting high up from the right-hand side or low down from the left-hand side.

Some scholars have suggested that the painting represents religious strife, with the conflicts between secular and religious authorities being presented by the two figures. Some think that the painting represents three levels: the heavens (represented by the astrolabe), the living world (represented by the books and musical instrument) and death (represented by the skull). Other people just assume the painting was designed to be hung in a stairwell so people going up or down would see the skull in all its glory.

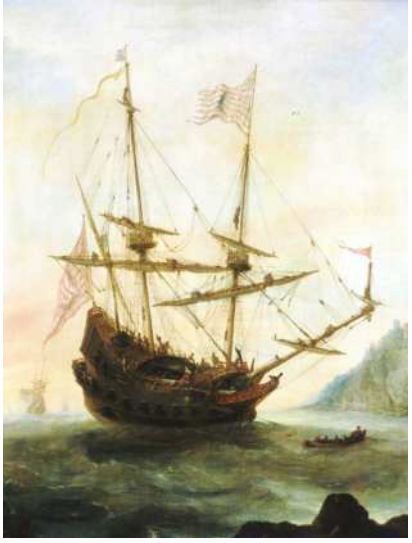
Adoration Of The Mystic Lamb

CREATED 1430-1432



Also known as the *Ghent Altarpiece*, the *Adoration Of The Mystic Lamb* is a very large and complex polyptych altarpiece, a 12-panel painting, eight of which feature hinged shutters to allow for two distinct views depending on whether they are open or shut. Art historians generally believe that the piece was designed by Dutch painter Hubert van Eyck in the early to mid 1420s and that the panels were painted by his younger brother, Jan van Eyck in the 1430s. The extravagant altarpiece was commissioned by the Ghent mayor, Jodocus Vijd and his wife, Lysbette, as part of a larger project for the Saint Bavo Cathedral chapel. The installation of the altarpiece was celebrated in 1432, but it was later moved, for security reasons, to the principle cathedral chapel, where it still resides to this day. It is understood that the piece once boasted an very ornate carved outer frame and may have even included clockwork mechanisms and music, but that these elements were destroyed during the Protestant Reformation.

Santa Maria LAUNCHED 1460



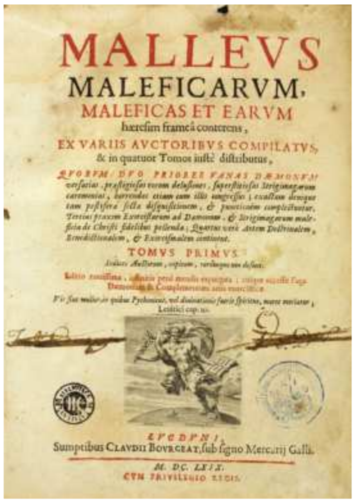
Santa Maria, or La Santa Maria de la Inmaculada Concepcion (The Holy Mary of the Immaculate Conception) was the ship used by Christopher Columbus on his first voyage. Built in Pontevedra, Galicia, in north-west Spain, Santa Maria measured about 19 metres, had a single deck, sported three small masts and weighed about 100 tons, making it the largest of Columbus's vessels, but also the slowest. The ship was actually owned by Juan de la Cosa, the Spanish navigator and cartographer responsible for designing the earliest European world map that incorporated the Americas.

The ship performed impeccably during voyages across the Atlantic, but on 24 December 1492, having not slept for two days, Columbus decided to sleep. His steersman followed suit, leaving a cabin boy to steer. The ship was carried by currents onto a sandbank at the present-day site of Cap-Haitien in Haiti, where it sank the following day.

Malleus Maleficarum CREATED 1486

Coming second only to the Bible in terms of sales for almost 200 years, the *Malleus Maleficarum* (*Hammer Of Witches*) is the most famous and significant treatise on witchcraft, and was written by the Catholic clergyman Heinrich Kramer (under his Latinised name Henricus Institoris). First published in the German city of Speyer in 1487, the book seems to celebrate the extermination of witches and was adopted by royal courts during the Renaissance, having a definite hand in the increasingly brutal persecution of witchcraft throughout the 16th and 17th centuries.

In the book, the practice of sorcery is elevated to the same criminal status as heresy and encourages the use or torture to obtain confessions from those suspected of witchcraft, ultimately championing the death penalty as the only truly effective remedy against preventing people from being seduced by the occult. Mercifully, the general perception of witches being harmful to society began to wane as the Age of Enlightenment was ushered in during the 18th century and the *Malleus Maleficarum* was sidelined to being thought of as a curiosity rather than an instruction manual.



MALLEVS
MALEFICARVM,
MALEFICAS ET EARVM
hæresim frameá conterens,
EX VARIIS AVCTORIBVS COMPILATVS,
& in quatuor Tomos iuste distributus,

TOMVS PRIMVS.

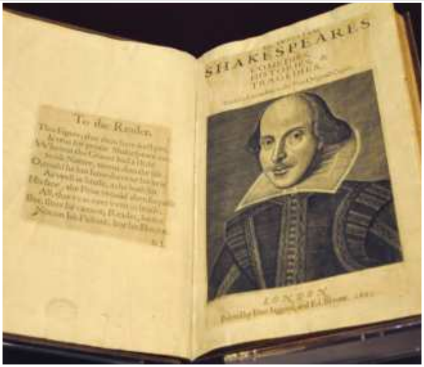
LVGDVNI,
Sumptibus CLAVDII BOVRGEAT, sub signo Mercurij Galli.
M. DC. LXIX.
CVM PRIVILEGIO REGIS.

First Folio

CREATED 1623

So-called by modern scholars, the *First Folio* is actually titled *Mr William Shakespeare's Comedies, Histories, & Tragedies* and contains 36 of Shakespeare's plays, including *The Tempest*, *As You Like It*, *Macbeth* and *Antony and Cleopatra*, plus many more that hadn't previously been published. The folio was compiled by John Heminge and Henry Condell and was dedicated with the "incomparable pair of brethren" William Herbert, Third Earl of Pembroke as well as his brother, Philip, Earl of Montgomery.

The *First Folio* is considered to be the only truly reliable text for about 20 of the plays featured, as more modern editions, while easier to read, are lacking the possible actor cues of the *Folio*, such as capitalisation, different punctuation and even the changing or removal of entire words. The *First Folio* was reissued in paperback format in the 1990s and today many theatre companies producing the works of Shakespeare use the *First Folio* as the basis for their productions, citing it to contain a much clearer vision of how the plays were meant to be performed.



Florence Cathedral CREATED 1436

Florence's cathedral dominates the city skyline thanks to its magnificent Renaissance dome designed and built by Filippo Brunelleschi in 1436. Although a brick dome was created by the original architect, Arnolfo di Cambio, the building required an octagonal dome that was higher and wider and with no external buttresses. Italian architects considered Gothic-style buttresses to be ugly and they were actually banned in Florence.

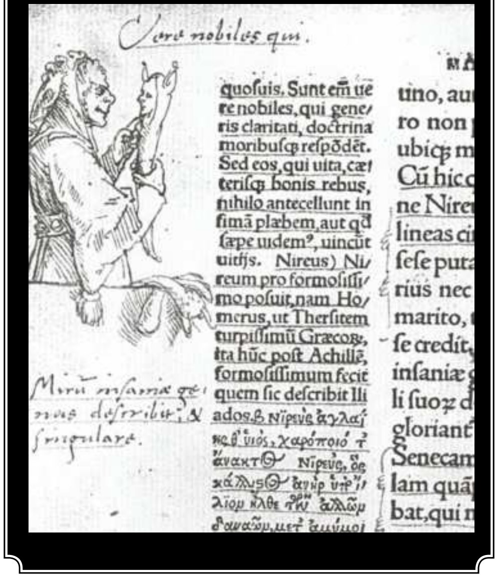
Creating a dome for the cathedral posed many technical problems for Brunelleschi and so he looked to the Pantheon in Rome for inspiration. The Pantheon's dome was made from a single shell of concrete, the formula of which had been forgotten, so an alternate means had to be found. Brunelleschi's method involved creating a double shell of sandstone and marble, with a barrel-style series of stone and iron chains embedded within the inner dome that were rigid enough to hold their octagonal shape, support the weight and not cause the dome to deform. The result was a breathtaking feat of engineering.

> "Italian architects considered Gothic-style buttresses ugly"

In Praise Of Folly CREATED 1509

First printed in 1511, *In Praise Of Folly* is an essay written by Desiderius Erasmus of Rotterdam that satirically attacks the traditions and superstitions of Europe. The essay is widely considered to be one of the most notable works of the Renaissance and played an important part in the Protestant Reformation later that century.

The essay starts off in a light-hearted manner but soon darkens as the author examines the superstitious abuses of Catholic doctrine and corrupt practices in parts of the Roman Catholic Church. Though it was written in a style typical of the Renaissance, with Folly parading as a goddess and praising herself for all that is good in the world, friends of Erasmus grew concerned that his attacking of the establishment could lead to dangers. Regardless, the critique within the essay of the Church and its political allies helped to lay the foundations for the Reformation.

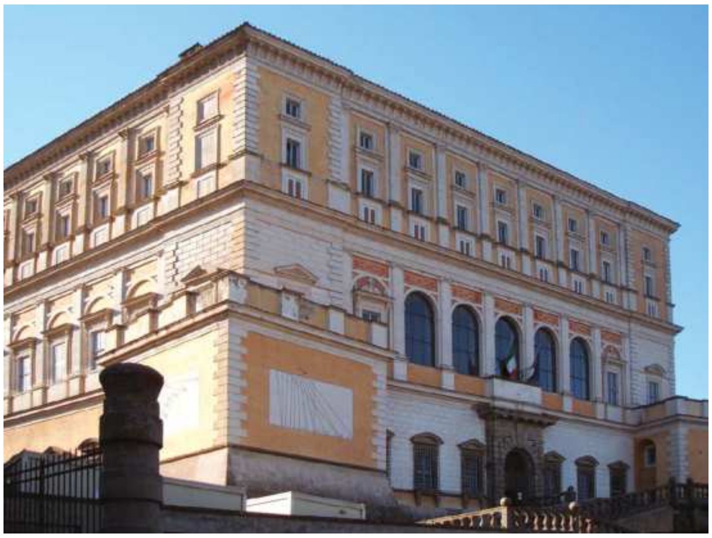


Clare nobiles qui.

quoſuis. Sunt enĩ ue
re nobiles, qui gene
ris claritati, doctrina
moribuſq; reſpõdẽt.
Sed eos, qui uita, cæ
teriſq; bonis rebus,
nihilo antecellunt in
fimã plæbem, aut qđ
ſæpe uidemꝰ, uincũt
uitijs. Nireus) Ni
reum pro formoſiſſi
mo poſuit, nam Ho
merus, ut Therſitem
turpiſſimũ Græcorꝝ,
ita hũc poſt Achillẽ,
formoſiſſimum fecit
quem ſic deſcribit Ili
ados. β

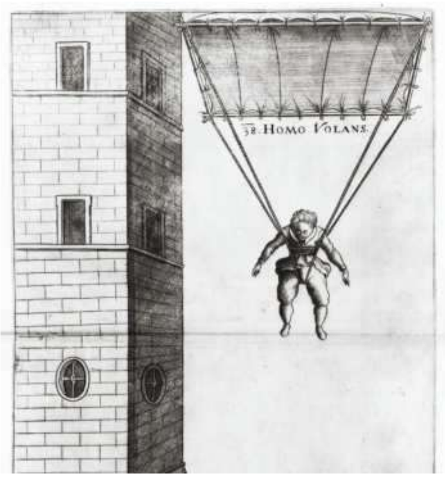
Miru infamia que nos deſcribit; & ſingulare.

Villa Farnese CREATED 1559



Also known as Villa Caprarola, the Villa Farnese is a mansion situated in the town of Caprarola in the Viterbo province, Northern Lazio, Italy, and was designed by architect Giacomo Barozzi da Vignola. The site was originally acquired by Cardinal Alessandro Farnese, who would go on to become Pope Paul III, and plans were drawn up to build an ambitious pentagonal-shaped building on the land, complete with a pentagonal courtyard. The foundations for this structure were constructed between 1515 and 1530 but work never continued until the 1550s, when Farnese's grandson, Cardinal Alessandro Farnese planned to turn the partially constructed building into a country house, commissioning da Vignola to use the existing foundations in order to make his dream a reality.

The villa is situated directly above the town of Caprarola and dominates its surroundings, providing a breathtaking Renaissance-style opening to the Monte Cimini, a range of wooded volcanic hills. The five-sided building features buttresses to support the upper floors and has always been seen as an expression of power rather than a domestic abode.



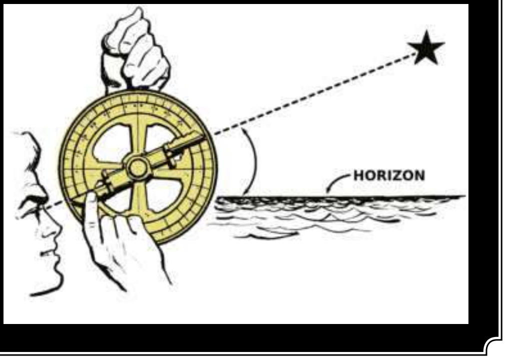
The parachute
CREATED 1470s

Though in modern day we all know what a parachute is, did you know that the earliest evidence for the use of parachutes dates back to the Renaissance period? The oldest parachute design appears in a manuscript from Italy dating back to the 1470s that shows a free-hanging man clutching onto a frame attached to a conical canopy. Although the surface area of the design appears to offer effective resistance, the wooden frame could be considered more of a hindrance than a help, the idea of what would evolve into the modern, packable parachutes used today is evident. A more practical parachute design was later sketched up by Leonardo da Vinci in his 12-volume bound set of drawings and writings known as the *Codex Atlanticus* in 1485. In da Vinci's drawings, the parachute is better proportioned to offer greater resistance, though it also features a wooden frame which holds the parachute open.

Mariner's astrolabe CREATED 1550s

The mariner's astrolabe is a piece of apparatus to help determine the latitude of a ship at sea by measuring the Sun's noon altitude or the meridian altitude of a star of known declination. Not an astrolabe in the truly conventional sense, this version was rather a graduated circle featuring an alidade (turning board) for measuring vertical angles. Mariner's astrolabes were designed to better cope with the high winds and rough waters that boats would be expected to encounter.

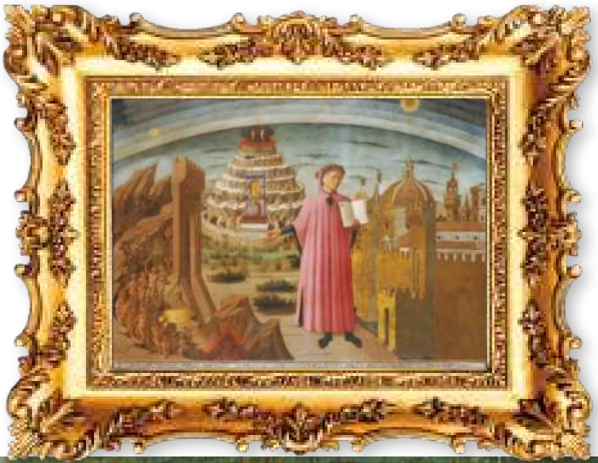
To use the astrolabe, the navigator would hold the instrument by a ring at the top to allow it to remain vertical and then align the place of the astrolabe to the direction of the object of interest. The alidade would then be aligned to the point at the object and the altitude reading was taken from the outer scale. Though records of the device date back to the 13th century, the world's oldest mariner's astrolabe with a confirmed date of 1554 can be found in the Corpus Christi Museum of Science and History in Texas, USA.



La Commedia Illumina Firenze CREATED 1440s

Alternatively known as 'The Comedy Illuminating Florence', *La Commedia Illumina Firenze* is a painting by Domenico di Michelino that adorns the wall of Florence Cathedral. The image depicts Dante Alighieri, the Italian poet, holding his work *The Divine Comedy*, which is widely considered the greatest literary work composed in the Italian language. The poem describes Dante's travels through Hell, Purgatory and Heaven, drawing particular inspiration from the *Summa Theologica*, which was a handy compendium of all of the main theological teachings of the Catholic Church.

Although Dante and his poem are at the forefront of the painting, the image also features the city of Florence and representations of Hell, Mount Purgatory, the earthly Paradise (with Adam and Eve) in addition to the celestial spheres.



Pazzi Chapel CREATED 1443

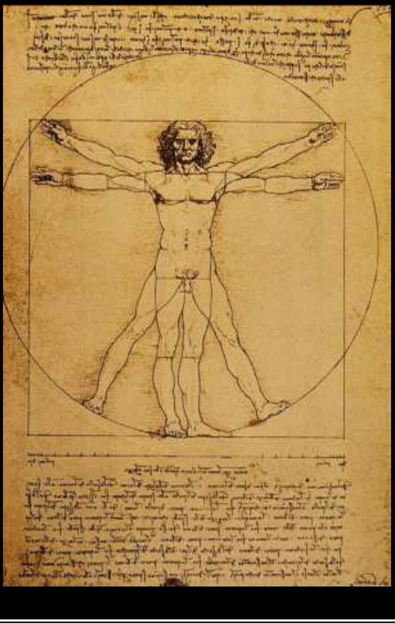
The Pazzi Chapel is located on the southern flank of the Basilica di Santa Croce in Florence, Italy, and is considered to be one of the true masterpieces of Renaissance architecture. Which then raises the question of why doesn't anyone know who made it? It was originally thought to have been the design of Italian architect and designer Filippo Brunelleschi, but many scholars are of the opinion that he was only responsible for the plan of the chapel, which drew its inspiration from simple geometrical shapes.

The chapel, which was used as the chapter house by the Santa Croce friars, is preceded by an entrance hall-like atrium supported by six Corinthian columns placed next to a central arch. Inside, the chapel is rectangular in shape but contains one square room with a large umbrella-shaped dome. The white plaster on the walls is a cool contrast to the grey pilasters and beautiful terracotta decorations complete the stunning look; the architecture of which draws comparisons with Rome's Pantheon.

Vitruvian Man CREATED 1490

The *Vitruvian Man*, or *L'Uomo Vitruviano*, is a drawing by Leonardo da Vinci that is based on notes that examine the correlations of ideal human proportions by the ancient Roman architect Vitruvius. The famous pen and ink paper drawing depicts a man in two superimposed positions inside a circle and a square which, according to Vitruvius in *Book III* of his treatise, *De Architectura*, demonstrates the human figure as being the principle source of proportion among the classical orders of architecture. The text that accompanies the sketch, delivered in da Vinci's favoured mirror writing, outlines the measurements of the human form as well as how they can be applied to architecture.

The drawing is relatively small for a piece of art, measuring just 13.6 x 10in and it is kept at the Gallerie dell'Accademia in Venice. Due to its somewhat fragile format, the paper is only occasionally put on display to the general public.

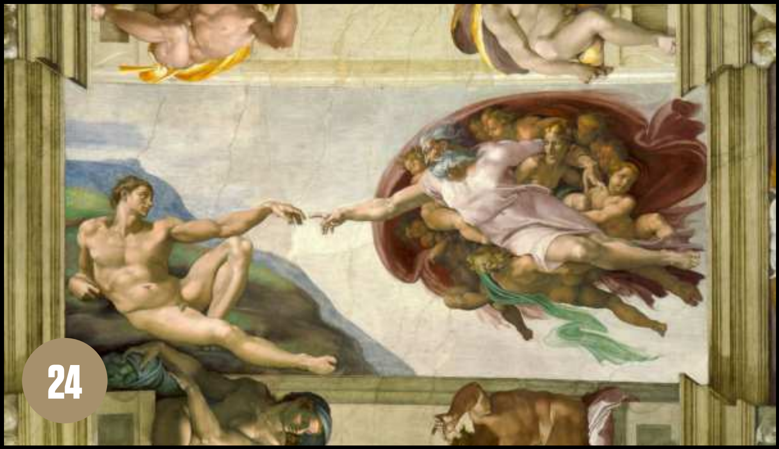


The Sistine Chapel ceiling CREATED 1508-1512

Although we have already looked at the *Creation Of Adam*, it is now time to marvel at the work as a whole. Michelangelo was actually commissioned to build the tomb for Pope Julius II in 1505, which was to include 40 statues and be finished in five years. However, Michelangelo experienced constant interruptions and the tomb, located in the Church of San Pietro in Vincoli, ended up taking 40 years and was never finished to his satisfaction. It was during this period that Michelangelo painted the Sistine Chapel ceiling, starting in 1508 and finishing four years later.

Though originally commissioned to paint the Twelve Apostles on the triangular ceiling supports and cover the central part of the ceiling with ornament, Michelangelo persuaded the Pope to grant him free rein and proposed a more complex scheme representing the creation of man, the fall of man, the promise of salvation through the prophets and the genealogy of Christ stretching over 500 square metres.

Containing over 300 figures, the ceiling focuses on nine episodes from the Book of Genesis divided up into three groups – God's Creation of the Earth, God's Creation of Humankind and the State of Humanity. The triangular ceiling supports were reserved for 12 men and women who prophesied the coming of Christ. The paintings have ensured that a queue of people snakes around St Peter's Square on a daily basis to marvel at the handiwork.



Emergence of the Renaissance

Trace the origins of the cultural movement we call the Renaissance, which has its roots in the city-states of Italy

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The key events that lead to the rebirth of learning and art

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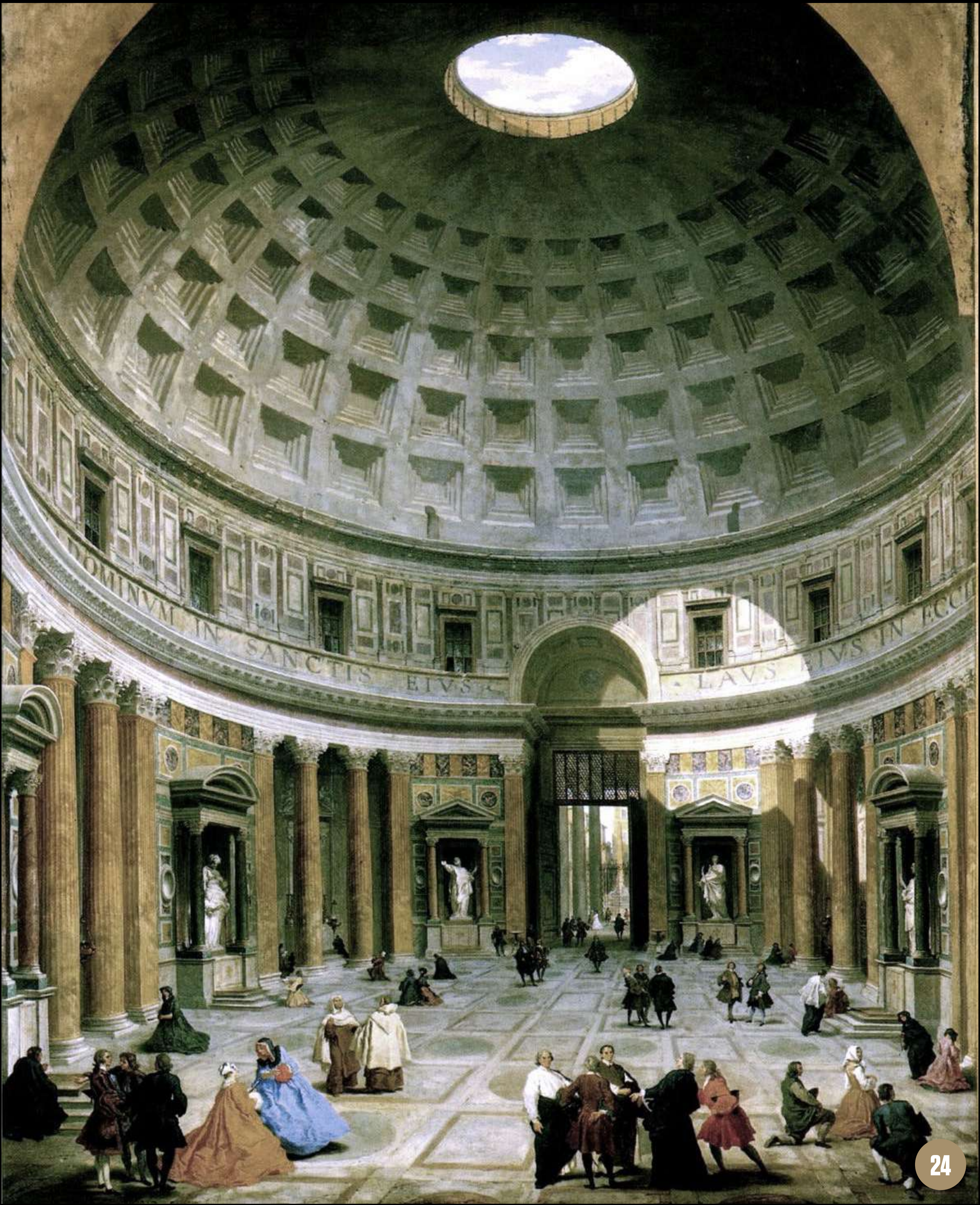
How Hellenistic art and classical ideas inspired the rebirth of culture

30 Life in Florence & Venice
What was life like for Italian citizens during the Renaissance?


DOMINVM IN SANCTIS EIVS
LAVS EIVS IN ECCL

24

© Alamy

The road to the Renaissance

The key events that shaped the rebirth of learning and art in Europe, especially on the Italian Peninsula

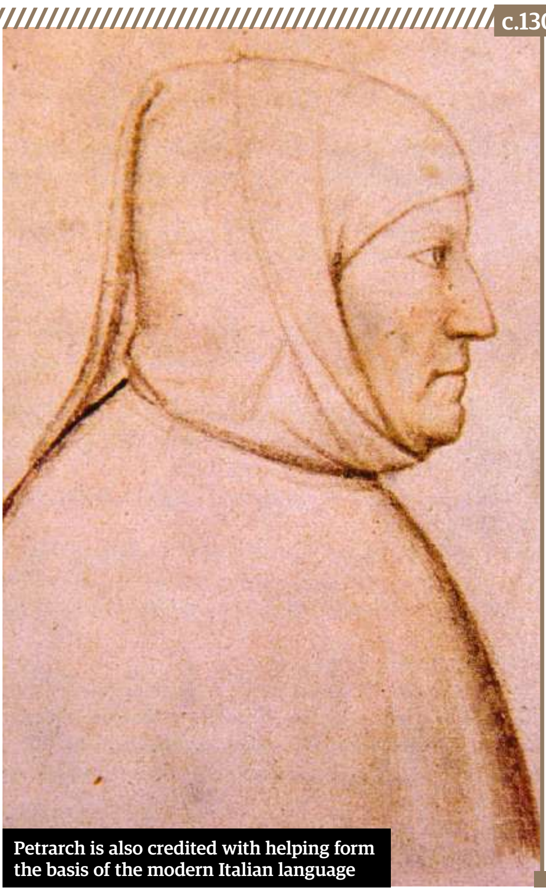
DIVINE COMEDY WRITTEN BY DANTE ALIGHIERI
1320 ■ Florence

c.1304 — 1320 — 1347

Growth of humanism

c.1304 ■ Italy

One of the key moments in the lead up to the Renaissance was the development of humanism, and a renewed interest in ancient Rome and ancient Greece. These new ideals were centred in Italy but soon spread to other areas of Europe. Humanism is based on the interest of individuals and the human capacity to learn, and encouraged thinkers of the era to develop upon ideas commonly accepted in the Middle Ages. The father of humanism, Francesco Petrarca or 'Petrarch', studied Cicero and Virgil, a philosopher and a poet from ancient Rome. He unearthed previously forgotten classical texts, and spread the belief that the world would once again reach the splendour of the ancient world. These ideas encouraged many other intellectuals to question the world in which they lived, and kicked-started new ways of cultural thought that weren't strictly secular.

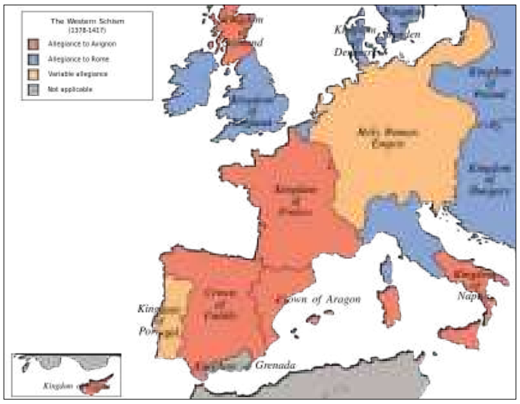


Petrarch is also credited with helping form the basis of the modern Italian language

Black Death

1347-1412 ■ Italy

Italy was not spared during the peak years of the Black Death. Even after its peak in Europe in the late 1340s, the disease remained throughout the Italian states. Brought over by rats that had hitched a ride on galleys from the east, both the bubonic and pneumonic plague struck hard. Messina, Sicily, was the first to feel its effects in 1347, but the pandemic gradually worked its way north as it reached Genoa, Venice and Pisa in the following year. Even as the disease died down in other parts of Europe, Italy suffered various recurrences throughout the ensuing decades, and the epidemic only finally faded in 1412. The Black Death lingered in both towns and the countryside right up until the 18th century when it at last died down for good.



The Great Schism

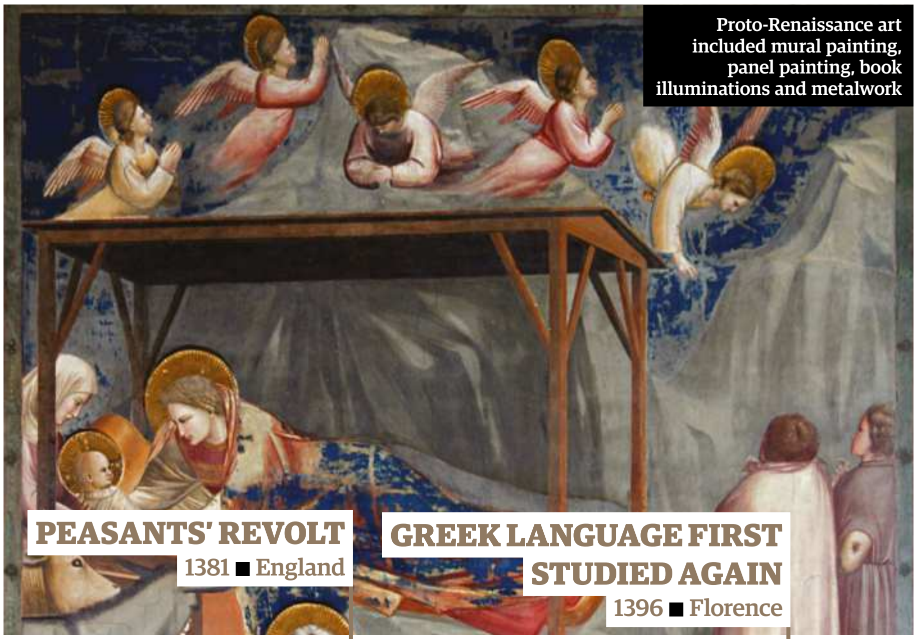
1378-1417 ■ Rome

After the death of Pope Gregory XI in 1378, the Catholic Church tore itself apart. Initially, Pope Urban VI was named as Gregory's successor, but within a few months, part of the Catholic hierarchy named Clement VII as the pope instead. Urban refused to step aside and, unable to reach a compromise, it was decided that he would rule the Church from Rome while Clement led his faction from Avignon, France. In 1409, in a bid to end the rivalry, a third pope, Alexander V, was elected shortly after, but this still didn't resolve the issue. The Council of Constance was called in 1414 to force the resignation of both John, who had replaced Alexander, and the Roman pope, Gregory XII, while dismissing the rule of the Avignon pope, Benedict XIII. This did the trick and paved the way for a once-again unified Catholic Church.

The Proto Renaissance

1300-1400 ■ Northern Italian states

Italy was the birthplace of the Renaissance. Prior to its beginning, the Proto Renaissance movement started in the northern Italian city states. Spanning roughly the entirety of the 14th century, it was dominated by a new wave of Gothic art. Originating in Siena, these were the first paintings that differed from traditional medieval artwork. The influence came from Byzantine art, which had begun to influence paintings in European courts. Giotto di Bondone became known as the father of painting, and is credited with bringing reality back into painting, creating works that superseded the obsolete paintings that had previously dominated the medieval era.



Proto-Renaissance art included mural painting, panel painting, book illuminations and metalwork

PEASANTS' REVOLT

1381 ■ England

GREEK LANGUAGE FIRST STUDIED AGAIN

1396 ■ Florence

1378

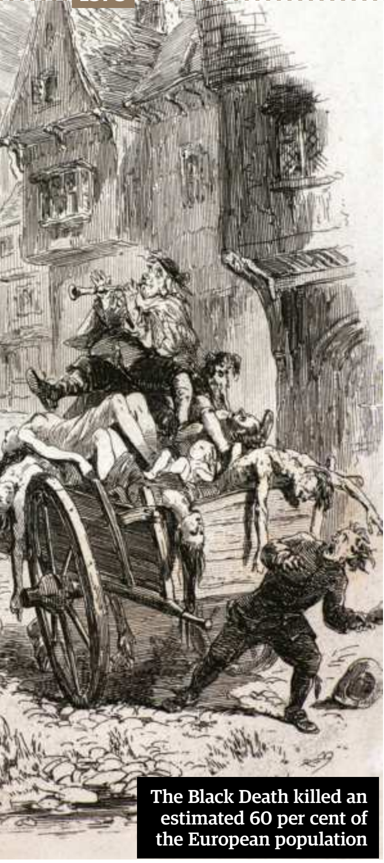
1300-1400

1381

1381

1396

1409



The Black Death killed an estimated 60 per cent of the European population

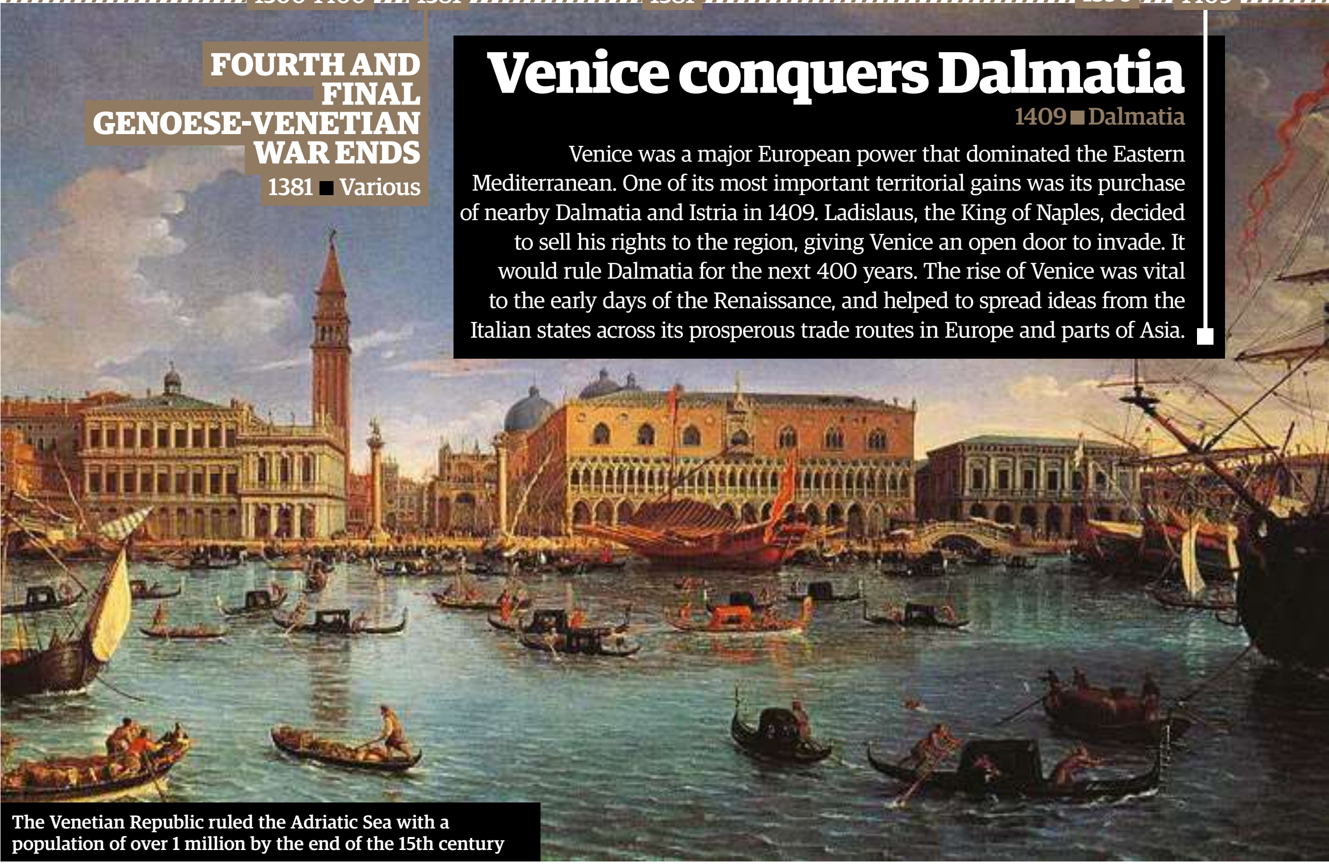
FOURTH AND FINAL GENOESE-VENETIAN WAR ENDS

1381 ■ Various

Venice conquers Dalmatia

1409 ■ Dalmatia

Venice was a major European power that dominated the Eastern Mediterranean. One of its most important territorial gains was its purchase of nearby Dalmatia and Istria in 1409. Ladislaus, the King of Naples, decided to sell his rights to the region, giving Venice an open door to invade. It would rule Dalmatia for the next 400 years. The rise of Venice was vital to the early days of the Renaissance, and helped to spread ideas from the Italian states across its prosperous trade routes in Europe and parts of Asia.

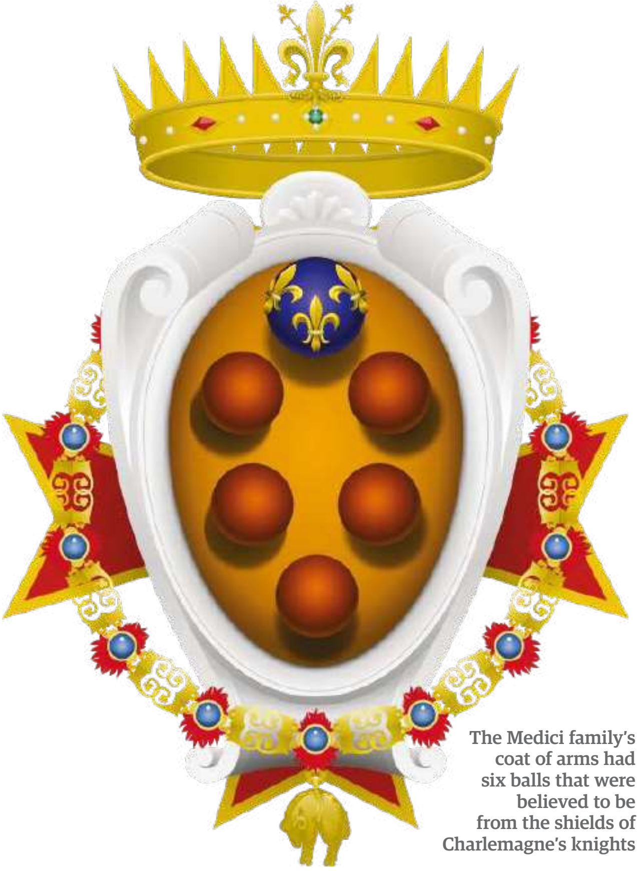


The Venetian Republic ruled the Adriatic Sea with a population of over 1 million by the end of the 15th century

Rise of the Medici family

1429 ■ Florence

The Medicis were a banking family in Florence who financially backed Renaissance artists like Michelangelo. The golden years of this dynasty began with Giovanni de' Medici, a banker who anchored his operations in Florence. As well as amassing a huge wealth, de' Medici was influential, holding many local political positions. He died in 1429, but his son, Cosimo, who was educated in the ways of humanism, inherited his fortune and created a business network over all of Europe. He was an astute entrepreneur, but also had a healthy appetite for the arts. Cosimo authorised the construction of cathedrals, supported Renaissance artists with their work, and built the Platonic Academy, which centred on schooling students on ancient works. Even after his death, Cosimo's son and grandson ruled astutely, helping Florence to cement its status as a major power, as well as an architectural and artistic centre. The family fell into decline shortly after, as the Italian Wars gripped the peninsula.



The Medici family's coat of arms had six balls that were believed to be from the shields of Charlemagne's knights

PAPACY RETURNS TO ROME

1420 ■ Rome

FIRST PUBLIC LIBRARY IN RENAISSANCE-ERA EUROPE OPENED

1444 ■ Florence

Growth of city-states

1450s ■ Florence, Milan, Venice, Genoa

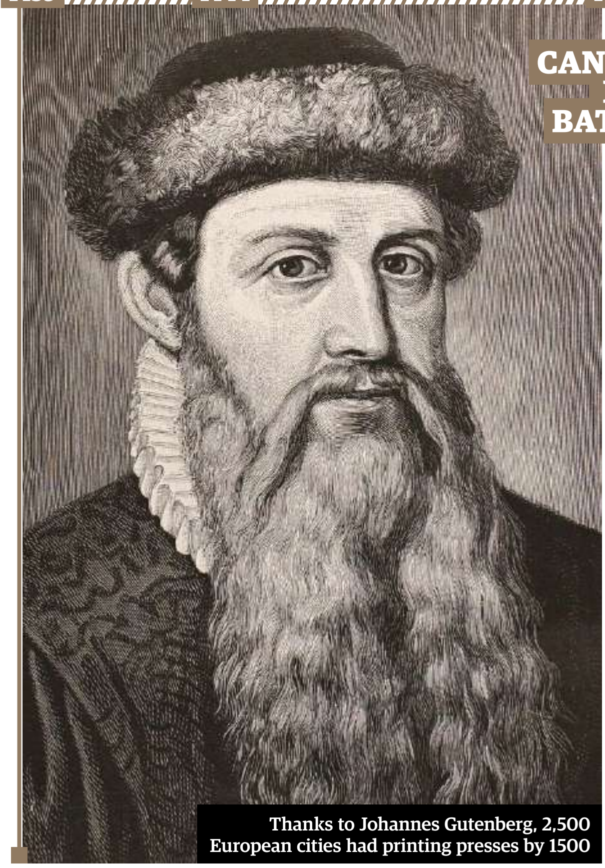
Northern Italy became an economic powerhouse in Continental Europe. By the middle of the 15th century, these city-states were at peace with the Papal States and the Kingdom of Naples to the south, after taking advantage of the Great Schism to break free of secular constraints. Florence grew powerful through trading wool, while Venice prospered from seaward trade as it managed commerce arriving from the east. All the cities acted as safe havens in which scholars and artists could call home after fleeing the Ottoman Empire after the dramatic fall of Constantinople. A wealthy merchant class formed in the prosperous city-states, nurturing a much better system than feudalism (which had dominated other areas of European society) for non-secular study and learning.

1429 1420 1439 1444 1450 1450 1452 1453

Invention of the printing press

1439 ■ Holy Roman Empire

The desire to read ancient texts was complemented by the birth of the printing press. Invented in 1439 by Johannes Gutenberg, the system allowed texts to be mass-produced rapidly and cheaply. Rather than being painstakingly hand copied, ink was transferred to paper using a screw mechanism that was influenced by wine and linen presses. It's estimated that by 1500, half a million books entered circulation, and many cities held book fairs. The most popular were the Bible and ancient texts. On this assembly line, learning could be circulated faster than ever before, and reach a wider audience. This technological advancement was one of the keys to the start of the Renaissance. More sections of the population became literate and interested in scholarly texts as an information revolution took place.



Thanks to Johannes Gutenberg, 2,500 European cities had printing presses by 1500

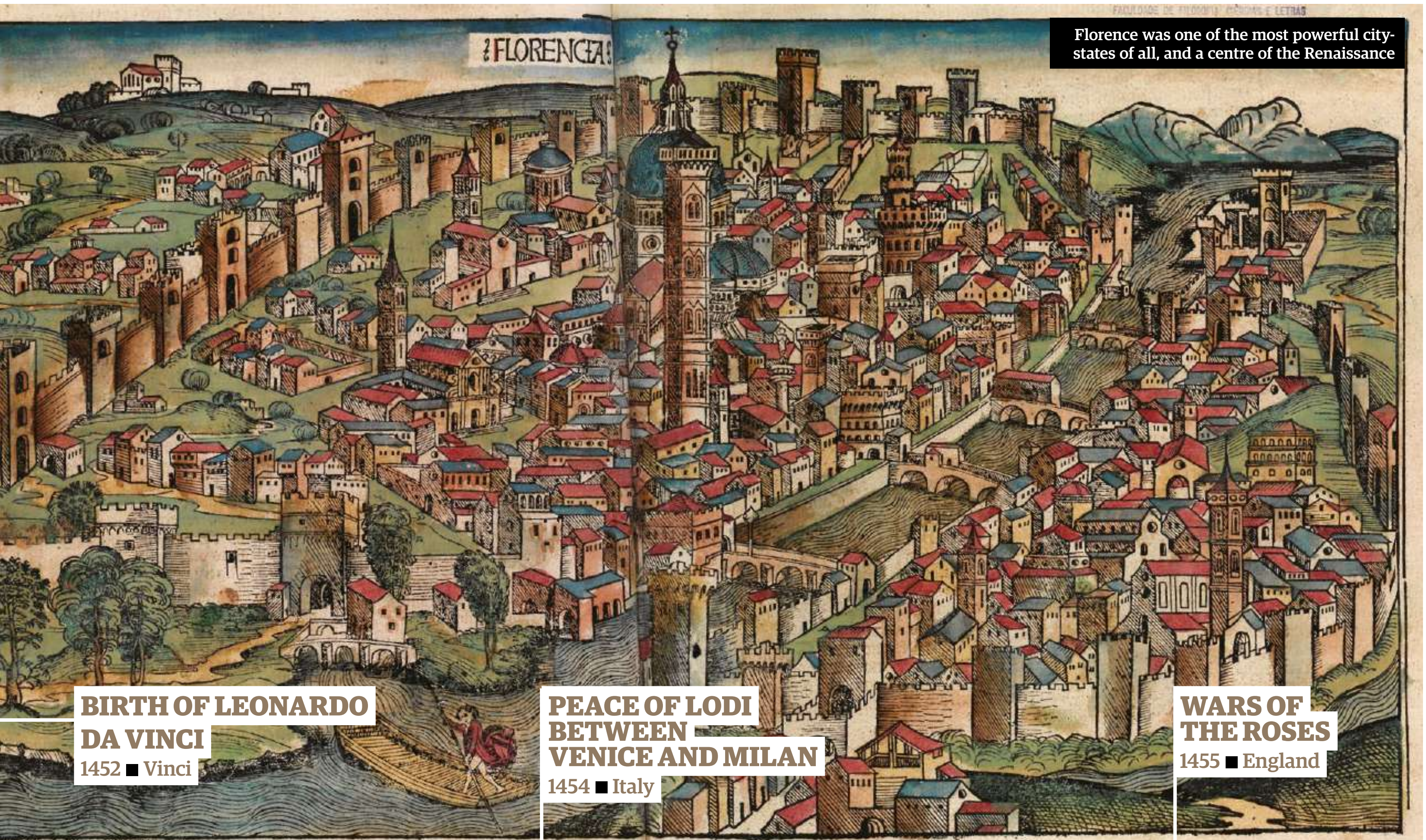
CANNON USED FOR THE FIRST TIME AT THE BATTLE OF FORMIGNY

1450 ■ France

Hundred Years' War ends

1453 ■ France

The closure of this 116-year war helped to kick-start the Renaissance. England, which had once been in the ascendency, suffered a series of losses culminating in one final defeat at the Battle of Castillon and King Henry VI going insane. After the war, England retreated from affairs on the continent, and became embroiled in the Wars of the Roses, an internal conflict featuring many veterans from the war. France and Spain turned their attention to the Italian Peninsula, thus commencing the Italian Wars. It wasn't all bloodshed, though, as army commanders returned home with stories of a new movement: the Renaissance.



Florence was one of the most powerful city-states of all, and a centre of the Renaissance

BIRTH OF LEONARDO DA VINCI

1452 ■ Vinci

PEACE OF LODI BETWEEN VENICE AND MILAN

1454 ■ Italy

WARS OF THE ROSES

1455 ■ England

1453 1454 1455

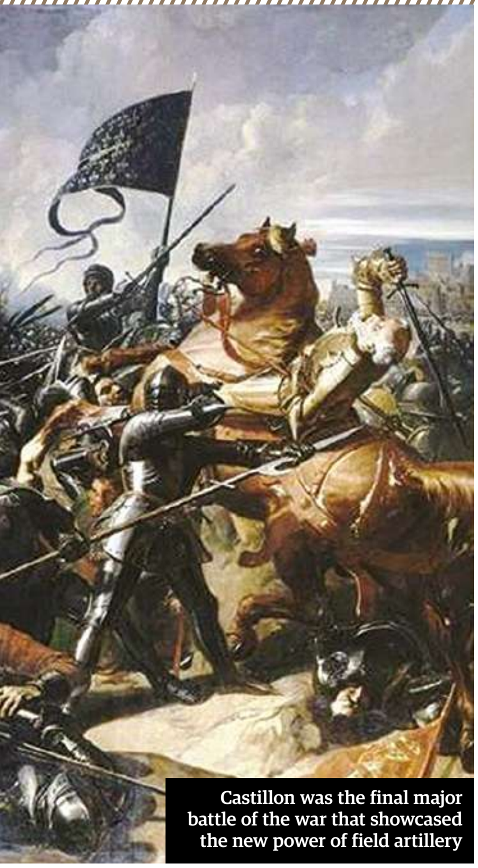
Fall of Constantinople

1453 ■ Constantinople

By the middle of the 15th century, the Ottoman Empire had grown in stature. It was so powerful that it was now a huge threat to the longevity of the Byzantine Empire. The city of Constantinople had withstood a number of sieges through history from the Turks, to the Rus' and the Arabs, but in 1453 its resolve was finally broken. Constantinople stood alone against its enemy, who barraged the walls with huge bombard cannons and formidable Janissary soldiers. As Ottoman forces broke through, the city was strewn with blood and corpses, but earlier Ottoman attacks had already forced many of the finest Byzantine minds to flee westwards. The most common destination was Florence, which benefitted from this new influx of knowledge, as the scholars brought with them their riches as well as ancient manuscripts and books, not seen in the West since the fall of the Roman Empire. Meanwhile, Constantinople was proclaimed the new capital of the Empire, as Ottoman armies gained a vital foothold in mainland Europe.

Golden Horn
Sea of Marmara
Bosphorus

Constantinople was a huge centre of power, and notoriously difficult to defeat, having resisted many sieges throughout its history



Castillon was the final major battle of the war that showcased the new power of field artillery

Rediscovering the Antiquity

While the Renaissance was intrinsically Christian in nature, its roots stemmed to the art, philosophy and literature of ancient times

In February 1506, a small, curious crowd gathered in a vineyard close to the Basilica of Santa Maria Maggiore in Rome and the ruins of Nero's celebrated Domus Aurea, his golden house on the slopes of the Esquiline Hill. The crowd was predominantly composed of eager art lovers, while at the front stood a genuine celebrity, the famous sculptor Michelangelo, who was one of the first to be alerted about the astonishing find that was being revealed before their fascinated eyes.

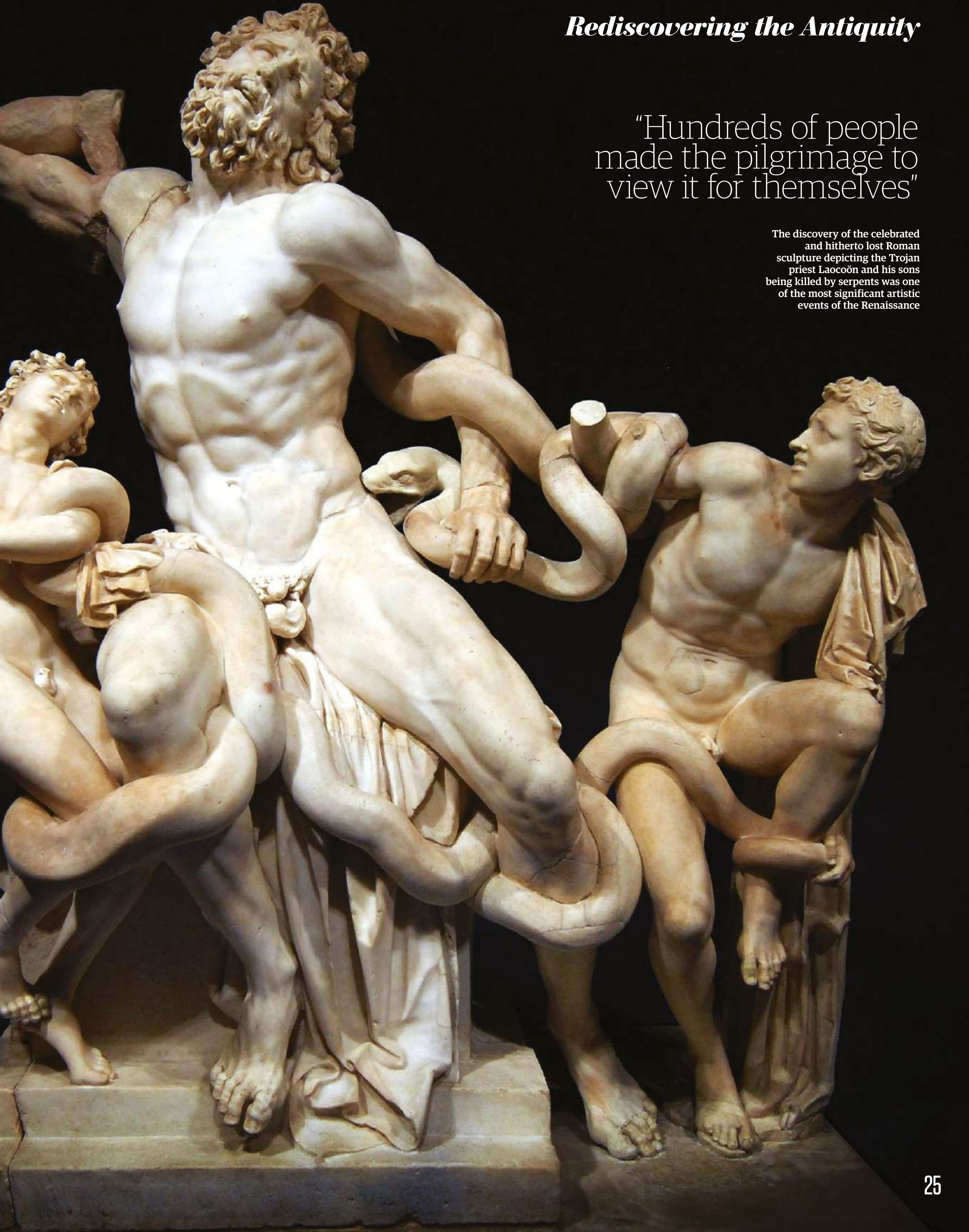
Thanks to Pliny, who had called it one of the finest pieces of sculpture ever created, everyone had heard of the Ancient Roman copy of a Greek statue depicting the Trojan priest Laocoön and his sons Antiphates and Thymbraeus struggling with serpents that had stood in a prominent position in the palace of the emperor Titus. But until now, it had been lost for centuries. Its excavation in a state of near intactness caused enormous excitement throughout Rome.

Over the following weeks, hundreds of people made the pilgrimage to view it for themselves. For the art lovers and intellectuals of the time, the vigorous power and artistic virtuosity of the statue was both thrilling and inspirational, and also a reinforcement of the deep preoccupation with the artistic output of their Roman and Greek forebears that had begun over a century earlier.

It is no coincidence that the beginning of the Italian Renaissance coincided with the final dying away of the Black Death pandemic that had cut a terrible swathe through Europe during the mid-14th century, killing an estimated 40-60 per cent of the continent's population. Until now, Europeans had placed all of their hope and faith in God and the power of prayer - however, prayer had not saved them from the horrors of the plague, and God had been nowhere to be seen. Europeans were left disillusioned and demoralised, and the overall mood across the continent was morbid and introspective as the greatly reduced populace dealt with their losses.

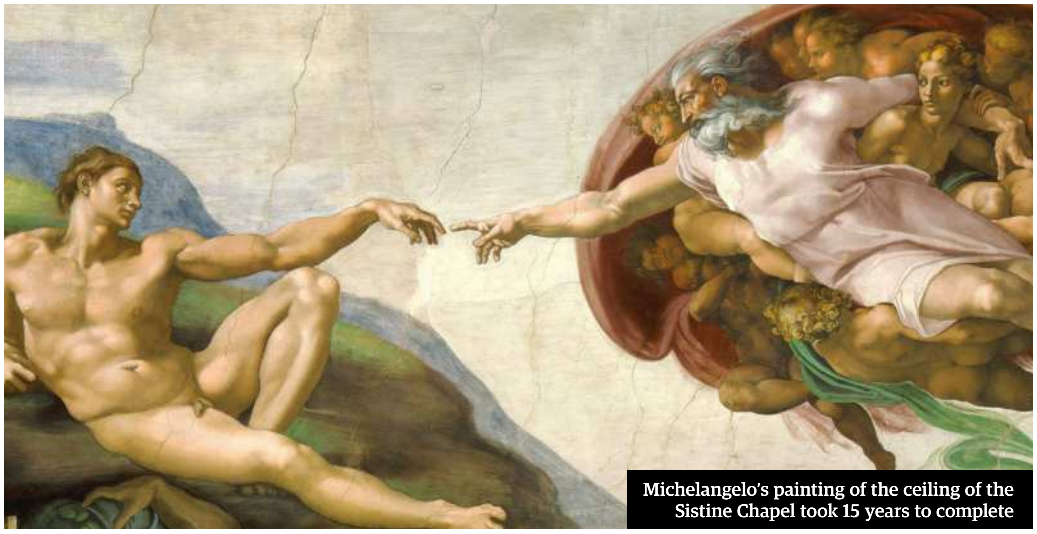
This lack of confidence in the Church was coupled with a natural desire to consider mortality and led to an increased interest in the ideals of Humanism. This was inspired by the philosophies of classical antiquity and exemplified by the writings of Tuscan scholar and poet Petrarch, who was obsessed with the study and interpretation of original Greek and Roman writings. Galvanised by his study of these ancient texts, Petrarch believed that it was up to the individual how they used the intellectual and artistic gifts that God had bestowed upon them and that this did not necessarily have to entail using them to promote his worship as had formerly been the case during what he thought of as the Dark Ages.

This belief was the underlying foundation of the Renaissance and, with a new appreciation for the artistic output of ancient times, was responsible for an astonishing output of art, literature, architecture



"Hundreds of people made the pilgrimage to view it for themselves"

The discovery of the celebrated and hitherto lost Roman sculpture depicting the Trojan priest Laocoön and his sons being killed by serpents was one of the most significant artistic events of the Renaissance



Michelangelo's painting of the ceiling of the Sistine Chapel took 15 years to complete

and philosophy, all of which owed something to the Ancient Greeks and Romans. However, these were not merely homages to the artistic and intellectual efforts of the past but rather a continuation of the same principles and themes that had inspired their forebears, seized upon with a new enthusiasm.

It was in art that the most obvious echoes from the past could be seen as painters and sculptors allowed themselves to be inspired by the tales from classical antiquity that had always been frowned upon by the Church as pagan. Before the widespread movement towards Humanist thought, it would have been extremely dangerous for an artist to risk accusations of heresy by painting ancient deities instead of Christian saints but times had changed. Wealthy patrons were keen to commission paintings of frolicking nymphs, badly behaved gods and beautiful goddesses rather than

The Renaissance visited Ancient Greek and Roman architecture like Rome's Pantheon, which was originally built in 27 BCE - 14 CE

the usual depictions of the Virgin Mary, favourite saints and the Crucifixion.

Artists prided themselves on drawing inspiration from original writings and painstakingly studying the classical paintings and sculptures that still existed for new ways to interpret these age-old tales. Ancient works, such as the *Apollo Belvedere* and *Farnese Hercules*, were considered to be both the epitome of masculine perfection and pinnacle of artistic accomplishment, and they would continue to inspire artists for several centuries.

The stiffly mannered style that had been popular before was now universally shunned in favour of a more natural, realistic one that owed much to the painted and mosaic Roman frescoes that had been excavated and sculptures like that of Laocoön and his sons, which showed unprecedented emotion and movement.

The rise of Humanism, which lauded the intrinsic virtue of humanity and believed that all men were in charge of their own destiny, naturally resulted in portraiture becoming increasingly popular as an art form in its own right. In the recent past, the great and the good would usually only be painted into religious scenes as donors kneeling before saints. Now men, women and even children were painted in a secular context as real individuals in their own right.

Artists drew upon the vivid, florid portraits, both painted and sculpted, produced by the Ancient Romans that, astonishingly, seemed more lifelike than paintings that had been created immediately prior to the Renaissance. It seemed shocking that such realism should have been gradually abandoned over the intervening centuries and so they devoted themselves to breathing life into their subjects, creating works of incredible vibrancy, psychological insight and realism.

If Humanist artists, intellectuals and writers were the main driving force behind the growth of the Renaissance, it was their wealthy Italian patrons who allowed it to take flame and flourish by commissioning works for their houses in the town and country. They, too, modelled themselves on their Roman forebears, who were cultured men and women enjoying a wide range of intellectual pursuits, and were equally at home discussing philosophy with their friends and watching the gladiators battling it out in the forum. This passion for the distant past inevitably began to influence more than just their art purchases and the books they read but also the houses they lived in and the gardens where they spent their leisure time.

Until the dawn of the Renaissance, the prevailing architectural style had been gothic and highly embellished but now architects started to look back to a more sophisticated, stripped back classical style inspired by the villas and temples of Ancient Greece and Rome. The rediscovery of the once lost seminal work *De Architectura*, which had been written between 30 and 15 BCE by the Roman military engineer and architect Marcus Vitruvius Pollo as a guide, only served to increase this fascination with the principles of classical architecture and their links to the great minds of antiquity, such as Plato and Archimedes, both of whom are cited.

After its rediscovery in 1414, various editions of Vitruvius' work quickly began to circulate, with the first illustrated version appearing almost a century later in 1511. It had an exciting and profound effect on contemporary architecture, influencing famed Renaissance architects like Brunelleschi, Bramante and Palladio. They enthusiastically embraced Vitruvius' basic tenets of architecture, which was that "the ideal building has three elements - it is sturdy, useful and beautiful" - a principle that he also applied to the human form, thus influencing artists as well.

To this end, Renaissance architects emulated those of Ancient Rome, a civilisation that had created civic buildings that were every bit as beautiful and elegant as palaces. They also used mathematics and the science of perspective to create facades that were perfectly proportioned and

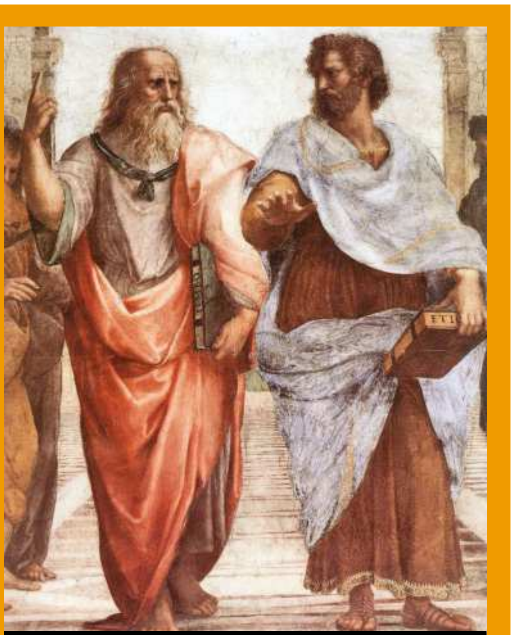
Plato's resurgence

Renaissance Italy's favourite philosopher

Although many ancient philosophers and writers were lauded during the Italian Renaissance, none were quite so revered or so intrinsically intertwined with its fundamental principles as Plato. His beliefs echoed the idealistic metaphysical and Humanist ones espoused by the Renaissance's leading lights.

Born to an aristocratic and politically influential family in Athens around 425 BCE, Plato was one of the best pupils of Socrates, who would have a profound influence on his subsequent work – even if he didn't always agree with him. After travelling widely, he returned to Athens to found his own school, the original Academy. His students included Aristotle, who would also go on to be a great inspiration to Renaissance intellectuals and artists to the extent that both men, with Plato pointing heavenwards while his pupil Aristotle holds his hand above the Earth, were painted together by Raphael for his great School of Athens fresco in the Vatican.

Plato published several books, most notably *Phaedo*, *Republic* and *Symposium*, all of which were available in Latin during the Renaissance, and widely read and discussed. *Phaedo* was of particular interest to intellectuals at the time as it dealt with the death of Socrates and discussed the same metaphysical concepts about the existence and purpose of the soul and the relationship between the divine and the human that they found so fascinating and that would inspire so much Renaissance art.

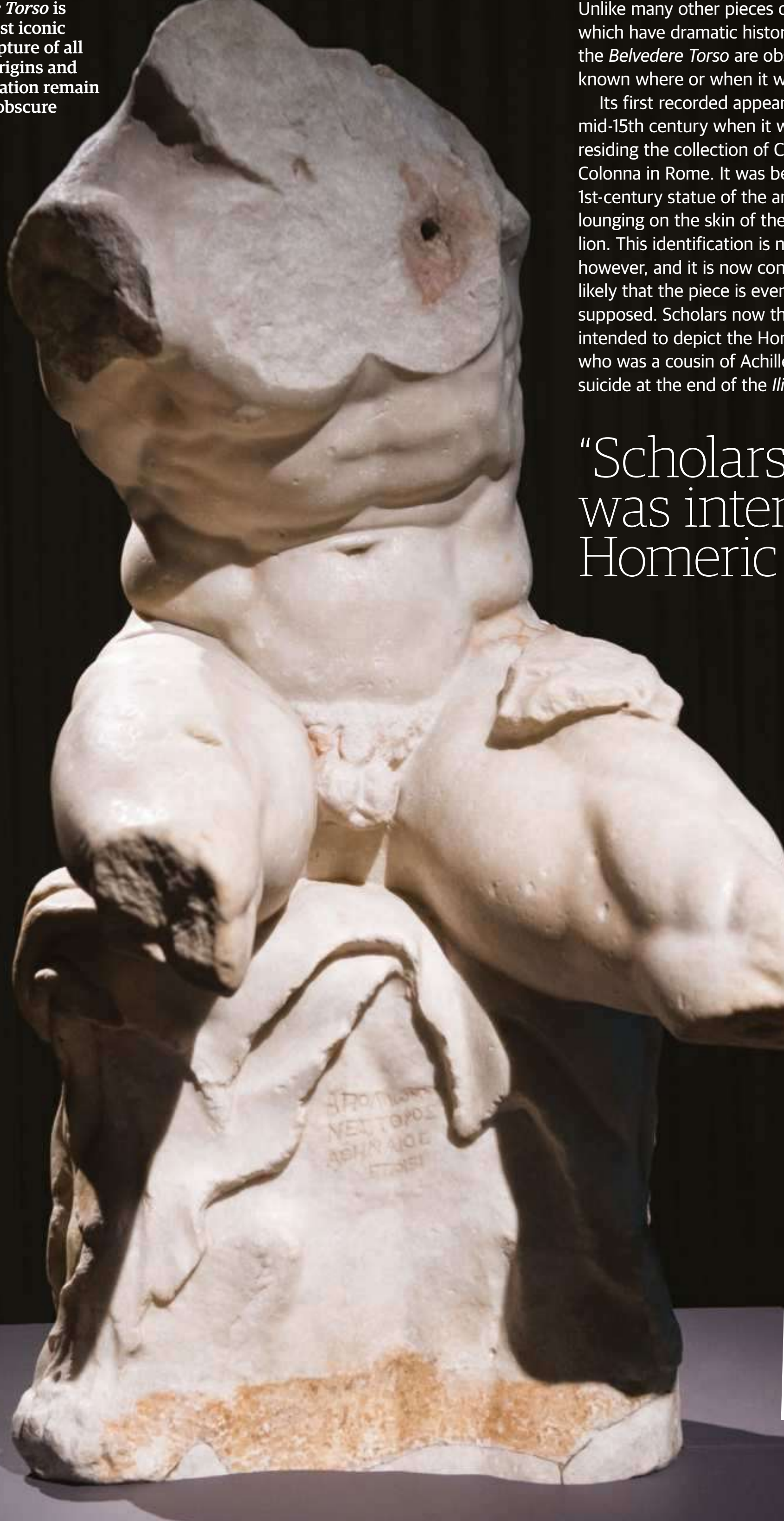


The ancient Greek writer and philosopher Plato was a huge influence on artists, writers and intellectuals of the Renaissance and was depicted several times in their work. In this case, he is deep in conversation with Aristotle in Raphael's School of Athens

After a successful teaching career, the elderly but still mentally alert Plato would die in his beloved Athens in around 347 BCE.

The Belvedere Torso

Artists of the Italian Renaissance were inspired by several pieces of ancient sculpture, but few can claim to be as iconic as the Belvedere Torso



The *Belvedere Torso* is one of the most iconic pieces of sculpture of all time, yet its origins and even identification remain tantalisingly obscure

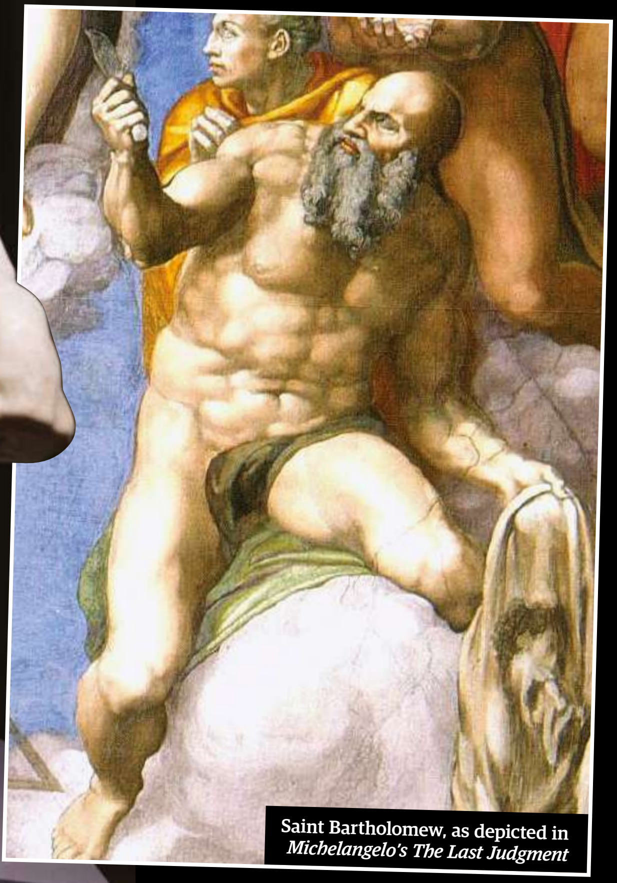
Unlike many other pieces of classical sculpture, which have dramatic histories, the origins of the *Belvedere Torso* are obscure and it isn't known where or when it was first discovered.

Its first recorded appearance was in the mid-15th century when it was apparently residing the collection of Cardinal Prospero Colonna in Rome. It was believed to be a 1st-century statue of the ancient hero Hercules lounging on the skin of the defeated Neamean lion. This identification is now in some doubt, however, and it is now considered far more likely that the piece is even older than first supposed. Scholars now think that it was intended to depict the Homeric hero Ajax, who was a cousin of Achilles and commits suicide at the end of the *Iliad*.

Despite its ravaged, incomplete appearance, the torso inspired several artists, especially Michelangelo, who referenced it several times in his work to the extent that it has been nicknamed 'the School of Michelangelo' due to its profound influence upon him. He was fascinated by its twisted posture and muscular definition, and he used it as the influence for many of the painted male and female figures in the Sistine Chapel.

It's said that Pope Julius II asked him to sculpt a replacement head and limbs for the piece but that he though the torso was perfect as it was and needed no further embellishment. Nowadays, the *Belvedere Torso* is housed in the Vatican Museums and continues to inspire and fascinate visitors.

> "Scholars now think that it was intended to depict the Homeric hero Ajax"



Saint Bartholomew, as depicted in *Michelangelo's The Last Judgment*

thus harmonious and pleasing to the eye of both ancient and Renaissance artists.

The celebrated Italian architect Palladio, who is perhaps the most famous of all Renaissance architects, was heavily influenced by Vitruvius and employed his principles while designing a series of stunning villas for wealthy Venetians. Fascinated by Roman architecture, he studied their methods and techniques closely and reinterpreted them for his clients, using modern materials to replicate classical designs, while at the same time drawing on Vitruvius' emphasis on perfect proportion, symmetry and perspective to create buildings that are still considered to be outstanding examples of architectural harmony today.

"This important work was the most popular encyclopaedia of the gods"

While Renaissance artists, sculptors and architects were getting excited about this new surge of interest in the visual aspects of classical culture, their academic peers were also excited about the new developments. The Roman authors Cicero, Livy, Virgil, Horace and Ovid were particularly venerated, with writers adopting their vigorous language, realistic even bawdy dialogue and their pure Latin, which was believed to be the most authentic form.

The great Renaissance authors Dante, Petrarch and Boccaccio were all heavily influenced by their classical forebears and the latter also took a great interest in the works of Homer, which would eventually lead him to create the first Latin translations of the *Iliad* and *Odyssey*, making them available to a vast new audience.

Boccaccio also translated the works of Euripides and Aristotle from the original Greek and, encouraged by his friend Petrarch, penned the hugely popular and influential *Genealogia Deorum Gentilium*, which untangled the often complicated if not downright incestuous relationships between the inhabitants of the Greek and Roman pantheons of the gods. This important work was the most popular encyclopaedia of the gods for over two centuries and, like Boccaccio's translation of Ancient Greek, works made these now familiar old tales available to a new generation of readers, all eager to have additional context for the classically inspired paintings and sculptures that were beginning to gain popularity first in the Italian cities and then gradually further afield.

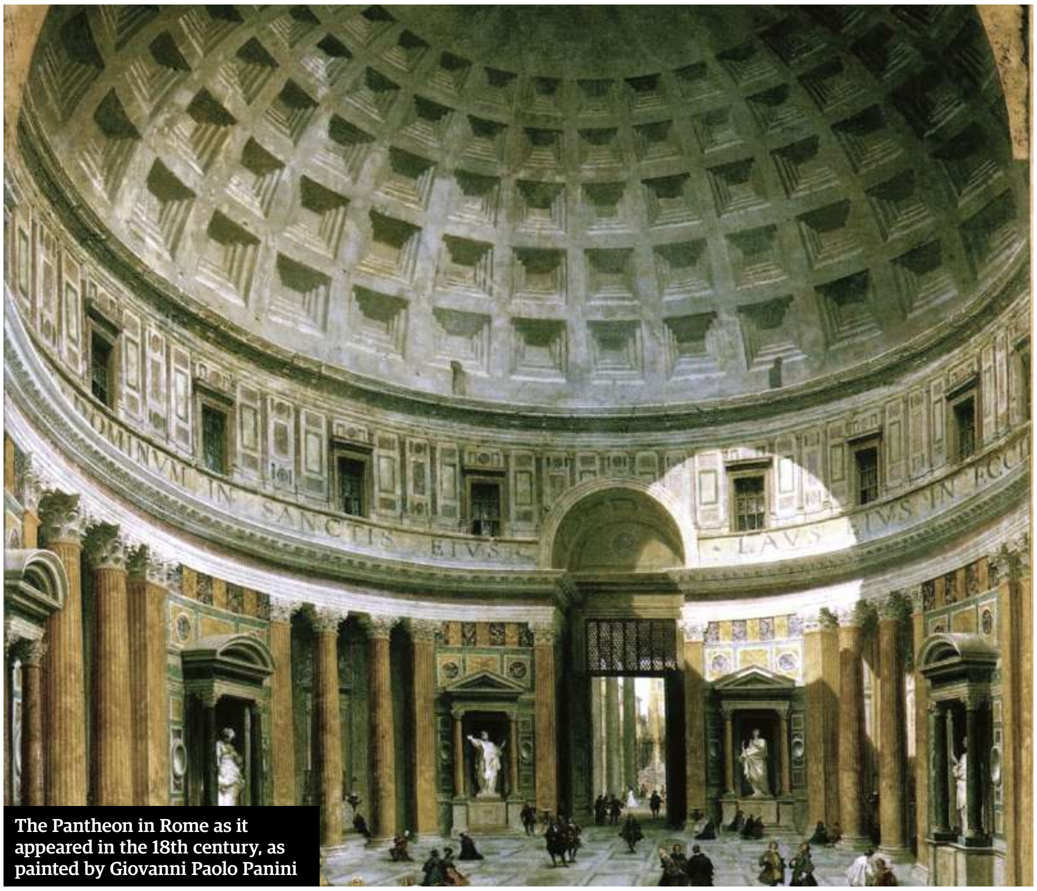
The Bible stories and tales of martyrdom and sainthood that had inspired most art until now were all well-known and generally picked up during childhood. The myths of Ancient Greece and Rome were less familiar, though, and required some background reading if they were to be properly appreciated.

Thanks to new translations and the discoveries of hitherto lost texts from antiquity, it was easier than ever to read the actual words of the ancients and Renaissance readers did so in their droves – particularly those who subscribed to Humanist theories. There was a particular surge of interest in the writings of the Greek philosopher Plato, with translations of his work being widely circulated among a new audience.

There was also much discussion about Plato's theories, especially that now known as Neoplatonism, which contends that it is man's ultimate goal to attain a state of spiritual perfection. It neatly tied in with the Humanist belief that all men were in control of their own destiny and should strive for virtue.

However, despite this increased interest in classical philosophy and the spread of Humanist ideals, the Renaissance remained intrinsically Christian and the intellectuals of the time did their best to entwine the two beliefs together, using classical philosophies, particularly those of Plato, Socrates and Aristotle, to illuminate the relevant points of Christianity and vice versa. The Church had entered a moribund state after the Black Death had decimated the population and these new ideas – and the beautiful, harmonious imagery and architecture that accompanied them – did much to update and revitalise its image, just as they breathed new life into the intellectual and artistic output of first Italy and then the entirety of Europe.

The *Apollo Belvedere*, a 120-140 BCE copy of a lost Greek original, was discovered towards the end of the Italian Renaissance and was immediately hailed as one of the greatest sculptures of all time



The Pantheon in Rome as it appeared in the 18th century, as painted by Giovanni Paolo Panini

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Life in Florence and Venice

Florence

Class, culture, and convention

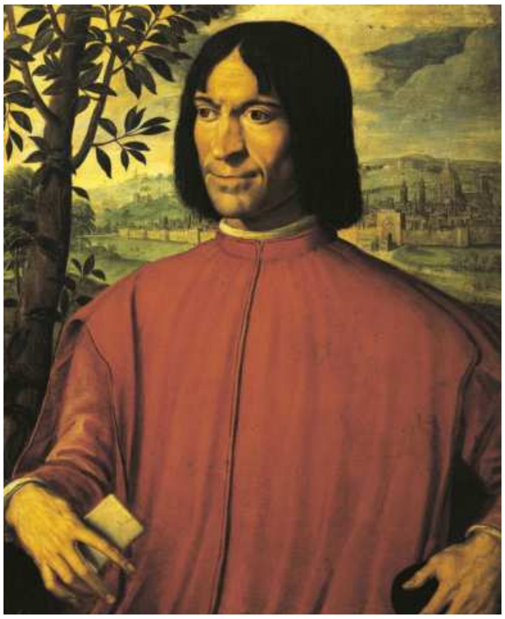
Life in Florence, cradle of the European Renaissance, promoted humanism, art and literature, and the emergence of social mobility.

By the end of the 14th century, the long shadow of the Black Death had begun to recede from the European continent. The millennium of the Middle Ages, centred on the afterlife amid the hegemony of the Roman Catholic Church, had also begun to wane. Resurgent humanism, focusing on the promise of the human spirit along with the revival of Classical art, literature, science, and intellectual thought, was ascendant.

The cultural soul of the Renaissance lay in Tuscany, where commerce and finance powered a flowering of prosperity that had not been experienced for centuries. Florence, one of several autonomous Italian city-states, flourished. By 1425, the city boasted a population of more than 60,000. Among its citizens were skilled workers in the textile industry, who wove wool from sheep raised in the local hill country or imported from the British Isles and Spain, into fine, colourful cloth. Bankers dealt in the gold florin, the currency of the city that became the standard of Western Europe, and there were merchants who traded profitably east and west across the Mediterranean Basin. Artists found the financial support of the wealthy and became prolific.

Prestige and patronage

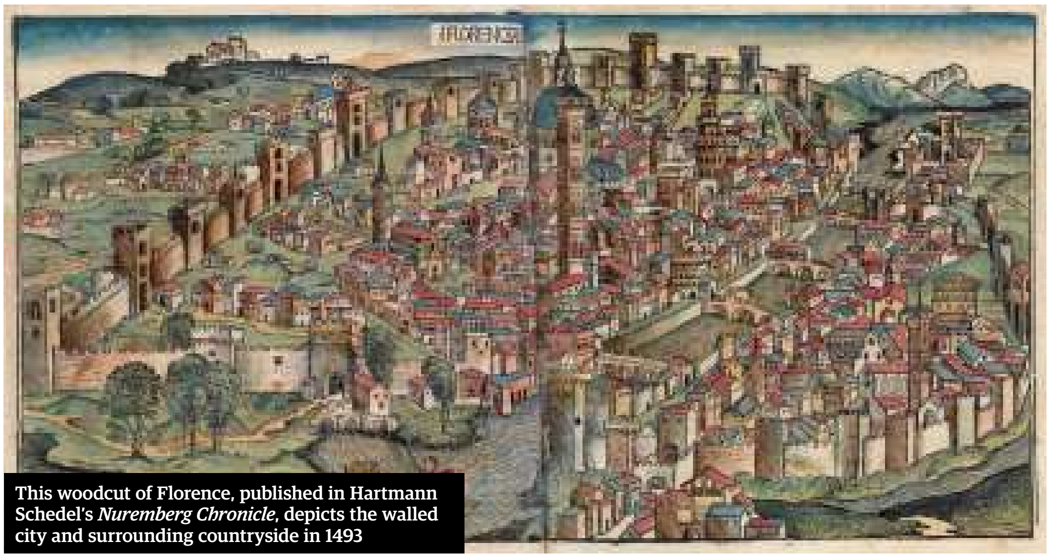
Along with the rise of humanism, a well-defined class system took shape in Renaissance Florence. While the feudal system prevailed elsewhere in Europe, a market economy flourished in northern Italy, and with it a new middle class of merchants emerged, including those who had become prosperous in business - particularly in the textile and financial industries. This class tended to become involved in local government and often married into the nobility - those who had inherited lands, money and titles through royal bloodlines -



Above: Lorenzo de' Medici was a patron of the arts and de facto ruler of Florence for a quarter century

Left: The expanse of the city of Florence, birthplace of the Renaissance, glimmers in the afternoon sun

Right centre: The family of Piero de' Medici is portrayed in *Madonna Of The Magnificat* by Renaissance master Sandro Botticelli


This woodcut of Florence, published in Hartmann Schedel's *Nuremberg Chronicle*, depicts the walled city and surrounding countryside in 1493

in order to improve their social status and protect their business interests. Wealthy merchants also became the most notable patrons of the arts in Renaissance Florence, often competing with one another to commission the grandest building project, painting or sculpture.

Tradesmen, skilled artisans and shop owners were usually members of one of 12 powerful guilds. These organisations, with total membership of 5,000 or more at any given time, set and maintained standards for quality of goods and services, protected markets from outside competition, and regulated trade. Forming the foundation of Florentine prosperity, the guilds wielded significant power in the halls of government as well. At the low end of the socioeconomic scale were unskilled labourers or peasants, who either made their living working in the city or engaged in subsistence farming, working land around the countryside that was owned by the nobility.

While a class system survived in Europe before, during, and after the Renaissance, the passage of time and opportunities for social advancement blurred these distinctions to varying degrees.

The Medici and the masters

For more than a century, the Medici family, wealthy financiers whose surname suggests that at one time an ancestor was involved in medicine, dominated Florence socially and politically. Although the city-state was ostensibly a republic, the Medici exerted actual control through their immense wealth and family connections, effectively running the financial house that conducted the banking business of the Pope and the Roman Catholic Church.

Giovanni de' Medici established the family's seat of power in Florence in 1397 by setting up the Medici Bank, enabling him to steadily gain wealth and influence for the next 37 years. In 1434, his son Cosimo de' Medici assumed control, becoming the foremost patron of the arts in the city. He also established the Plato Academy, where humanist issues and ideas were discussed, and collected manuscripts and artwork of the ancient Greek and Roman empires.

The Medici commissioned the construction of cathedrals, civic buildings, and some of the most recognised works of art produced by the masters during the Renaissance. Among the recipients of Medici patronage was Sandro Botticelli, whose paintings such as *The Birth Of Venus* and *Primavera* remain primary examples of the finest artwork of the early Renaissance.

Cosimo de' Medici died in 1464. His son Piero, plagued by ill health, led the family for five years until his death in 1469. Cosimo's 21-year-old grandson, Lorenzo de' Medici, popularly known as Lorenzo The Magnificent, took control for the next 23 years. The family was expelled from Florence in 1494 during the anti-establishment crusade of Dominican friar Girolamo Savonarola. The family did return to Florence years later, but its fortune and political influence had eroded appreciably.

> "The Medici exerted control through their wealth and family connections"

The patronage of the Medici eclipsed that of rival families and allowed the early Renaissance to thrive in Florence and beyond. It is estimated that during his lifetime, Cosimo alone contributed 600,000 florins to the advancement of the arts in the city and throughout the Italian peninsula. Four members of the Medici family were eventually elected Pope, and two became queens of France.

The sculptor Donatello, a Florentine master of the early Renaissance, created *David* under a commission from the Medici family

Everyday life in Florence

As a result of its prosperity, Florence became one of the most beautiful and cosmopolitan cities in Europe. The Florentine people were fortunate to familiarise themselves with the awakening of art and intellect. Public theatre productions were held regularly, often portraying themes related to the Passion of Christ and the tradition of the Church. Carnival, a festival that was held during the season of Lent prior to Easter, grew in importance and spectacle during the early Renaissance.

Celebrations and outdoor markets, during which the skilled artisans of Florence sold their highest quality work, marked the Feast of Saint John the Baptist, the city's patron saint. On the eve of the feast, a carriage race was held in the streets, and on the afternoon of feast day the Palio of the Berbers, another horse race, took place before a great crowd.

Trade brought foreign customs, spices, foods, and fashion to Florence, and the common people assimilated these new elements into their everyday lives. Opportunities for education were broadened, and boys were often apprenticed to tradesmen or artists to learn lifetime skills.

Greater social mobility allowed common people to achieve affluence as humanism emphasised the talents and potential of the individual on an unprecedented scale.

Italy
Florence
Mediterranean

Florence Cathedral

Crowned with the largest masonry dome in the world, Florence Duomo is a Renaissance masterpiece

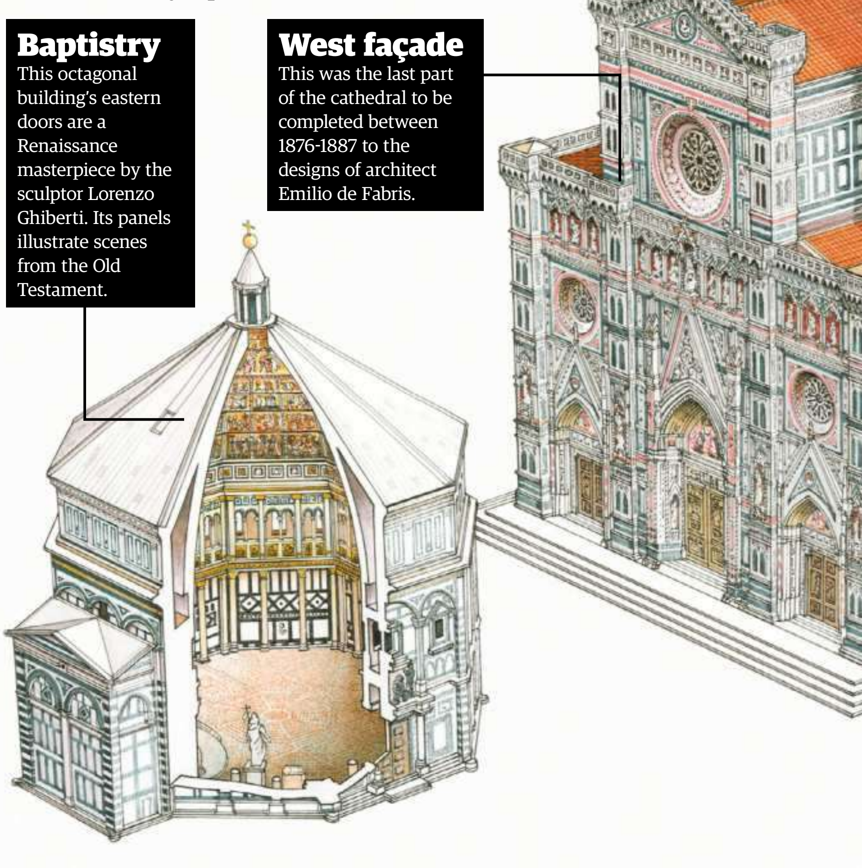
Popularly called the Duomo, Florence Cathedral's name is derived from the Latin 'domus dei' - the House of God - and is dedicated to the Virgin Mary Santa Maria del Fiore (St Mary of the Flower). The present building was started in 1296 and is the third cathedral to stand on the site. Taking 140 years to build, the original plan was only changed once during construction when the eastern half of the cathedral was massively expanded to allow for the now iconic dome. Work on this extraordinary structure began in 1420 and was completed in just 16 years. Higher and wider than any previously built, the octagonal dome was constructed without using a temporary wooden supporting frame. Consisting of a double shell made of sandstone, marble and brick, the base of the dome is 52 metres (171 feet) above the ground and has a staggering 44-metre (144-foot) diameter.

The cathedral's exterior walls are faced in alternate vertical and horizontal bands of coloured marble - white from Carrara, green from Prato and red from Siena. Despite the many architects to work on it the building retains a remarkable architectural and aesthetic cohesion. The interior is sparsely decorated, but contains a number of major Renaissance artworks and 44 stained-glass windows - in fact, the largest expanse of glass installed during 14th and 15th-century Italy.

Above the main door is the basilica's one-handed liturgical clock, which shows all 24 hours. Erected in 1443, it is still working today. The largest cathedral in Europe when it was built, it has become symbolic of Florence and its dome is instantly recognised around the globe. Such is the Duomo's cultural importance that the cathedral complex was designated a UNESCO World Heritage site in 1982.

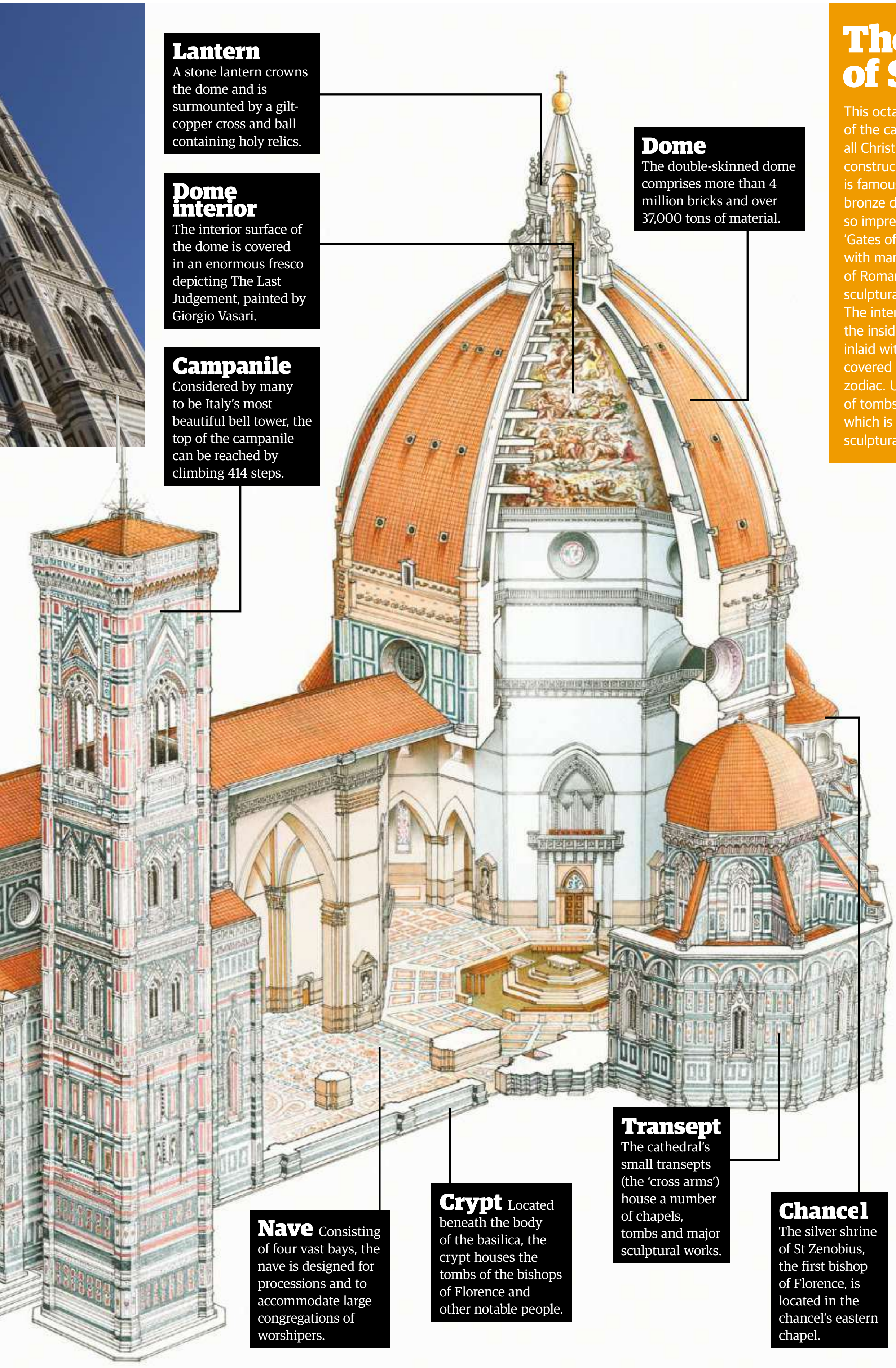
A tour of the basilica

It looks deceptively simple but Florence Cathedral boasts some very sophisticated architecture



Baptistry
This octagonal building's eastern doors are a Renaissance masterpiece by the sculptor Lorenzo Ghiberti. Its panels illustrate scenes from the Old Testament.

West façade
This was the last part of the cathedral to be completed between 1876-1887 to the designs of architect Emilio de Fabris.



Lantern A stone lantern crowns the dome and is surmounted by a gilt-copper cross and ball containing holy relics.

Dome interior The interior surface of the dome is covered in an enormous fresco depicting The Last Judgement, painted by Giorgio Vasari.

Campanile Considered by many to be Italy's most beautiful bell tower, the top of the campanile can be reached by climbing 414 steps.

Dome The double-skinned dome comprises more than 4 million bricks and over 37,000 tons of material.

Nave Consisting of four vast bays, the nave is designed for processions and to accommodate large congregations of worshipers.

Crypt Located beneath the body of the basilica, the crypt houses the tombs of the bishops of Florence and other notable people.

Transept The cathedral's small transepts (the 'cross arms') house a number of chapels, tombs and major sculptural works.

Chancel The silver shrine of St Zenobius, the first bishop of Florence, is located in the chancel's eastern chapel.

The Baptistry of St John

This octagonal building stands slightly to the west of the cathedral. Built to house the font in which all Christians in Florence were baptised, it was constructed between 1059 and 1128. The baptistry is famous for three sets of artistically important bronze doors. The eastern pair, facing the cathedral, so impressed Michelangelo that he called them the 'Gates of Paradise'. Made of sandstone and faced with marble incorporating many reused fragments of Roman buildings, the exterior features many sculptural groups and two massive porphyry columns. The interior of the baptistry is clad in marble, while the inside of the dome which roofs the structure is inlaid with magnificent gold mosaics. The floor is covered in marble featuring a design based on the zodiac. Unusually, the baptistry also houses a number of tombs, including that of the antipope John XXIII which is considered a significant early-Renaissance sculptural work.

Giotto's campanile

The campanile, or bell tower, was designed by the celebrated painter Giotto di Bondone and it houses seven bells. Standing next to the cathedral, it is built from the same coloured marbles and so blends in well with its neighbour. The tower is square in plan with sides measuring 15 metres (47 feet) and it soars 87 metres (278 feet) high. Embraced by polygonal buttresses at its corners, it's divided into five separate levels – the upper three of which contain windows. Each of the three top levels is larger than the one below it in every dimension. These differences in size counter the effect of perspective so when viewed from below, the three top levels of the tower look equal in size. Although Giotto originally intended the campanile to be surmounted by a tall spire, after his death it was decided to build a large projecting terrace instead, which lends the tower a dramatic 'broken off' look.

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Venice

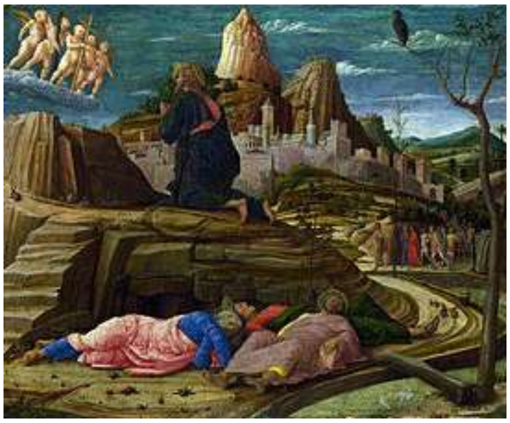
Renaissance range and Venetian vision

Once the most prosperous among the Italian city-states, Venice embraced the Renaissance amid a wave of economic and geopolitical change.

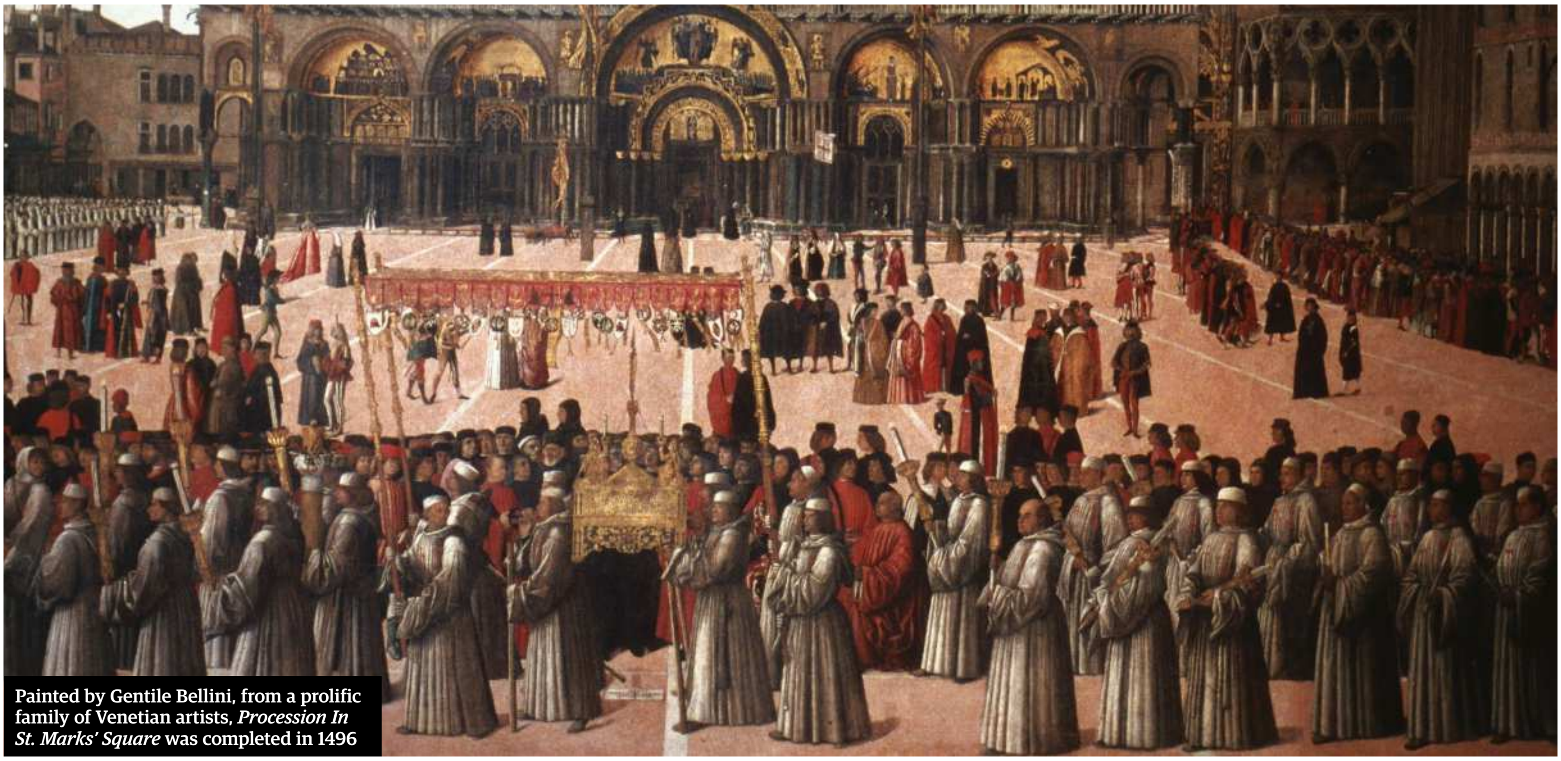
Unlike other major Italian city-states of the 15th century, Venice traced its lineage to refugees rather than the towering colossus of the Roman Empire. Roughly 1,000 years earlier, invading Lombards and other Germanic tribes had pushed into the Italian peninsula, driving many inhabitants of the northern country toward the Adriatic Sea. Rather than perish, the earliest Venetians built homes on the mud flats and islands at the headwaters of the Adriatic, taking the tides into their architecture to utilise waterways as roads and develop a population centre like none other.

In time Venice, a city of incomparable beauty, grew to dominate the eastern Mediterranean as far as the Byzantine Empire and its capital Constantinople. A nexus of shipbuilding, seafaring, and vigorous trade, Venice extended its influence and territory north and south in Italy, eastward to the Dalmatian coast, and across the Mediterranean to the Greek Isles. Its government was essentially a representative republic with a Great Council of prominent citizens to elect a Senate comprising of up to 300 men, a supreme ruling assembly called the Council of Ten, chosen from the Senate, and finally the embodiment of the ruling structure, the Doge, or Duke, of Venice.

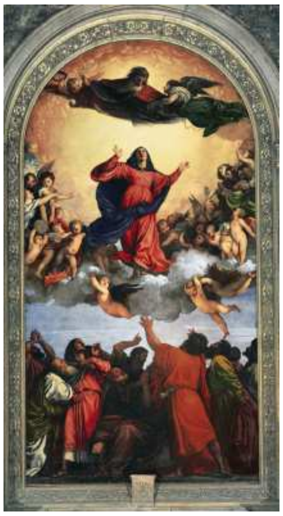
The Doge was elected for life, and the Council of Ten consistently kept his individual power in

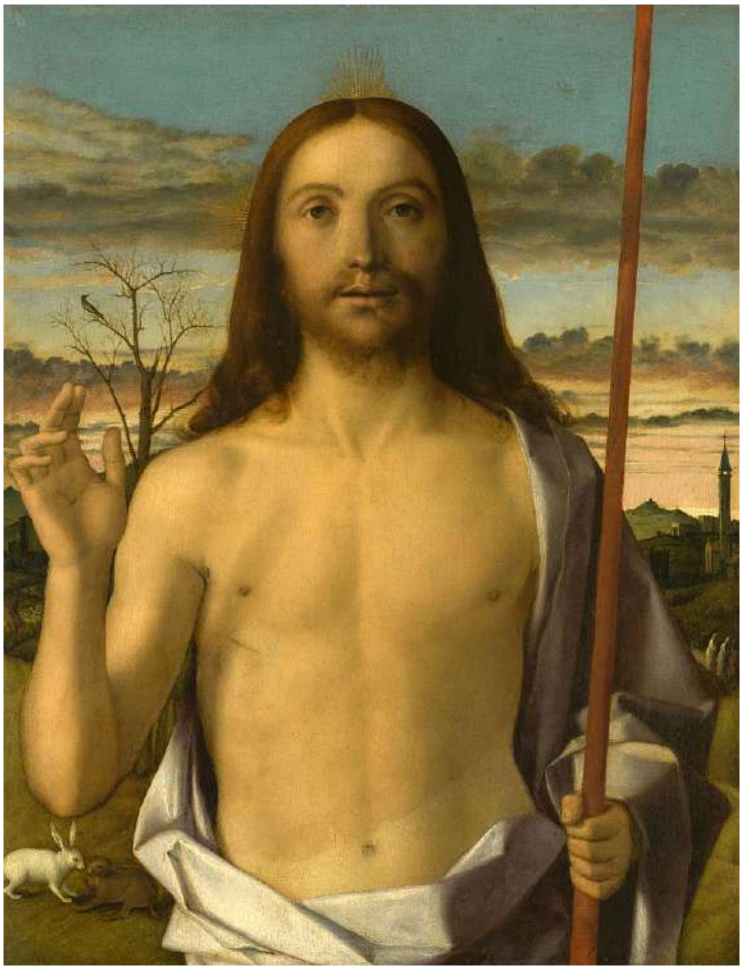


The Agony In The Garden, a panel of the San Zeno Altarpiece, was completed c.1458-60 by Andrea Mantegna



Painted by Gentile Bellini, from a prolific family of Venetian artists, *Procession In St. Marks' Square* was completed in 1496





Top: This 15th century drawing of Venice was produced for the famous travelling guide *Peregrinatio In Terram Sanctam* by Bernhard von Breidenbach

Above: The contrast between light and dark in oils is readily apparent in Titian's magnificent *Assumption Of The Virgin*

Right: In *Christ Blessing*, completed in 1500, Giovanni Bellini combined oil, tempera, and gold on a wooden panel

check. As the Renaissance gained momentum, Venetians generally accepted their limited representation in government, particularly due to their civic pride, prosperity and relatively high standard of living.

The view from Venice

Geographically, Venice was located to take full advantage of the brisk trade between the Byzantine Empire and the Near East and the population centres of Western Europe. The city was a primary port of entry and export. Taxes levied on incoming good generated tremendous wealth, and skilled artisans produced finished goods in glass, wood, lace, and other materials that were shipped throughout the Mediterranean.

"Venice's vibrant commerce… brought traders from around the known world"

The population of Venice ebbed and flowed from the time of the Black Death in the mid-14th century through the next 200 years, peaking at slightly fewer than 200,000. Although a small percentage were actually members of the nobility, other elite classes including merchants, bankers, and civil servants, were emerging with wealth in Venetian society. Numerous guilds were prevalent within the artisan class, exerting less direct control of the local economy than in rival Florence, but nevertheless prominent. Like most places, unskilled labourers and the peasant class occupied the lowest rung of Venetian society.

Venice's vibrant commerce, at its zenith during the early to middle years of the Renaissance, brought traders from around the known world to the port city, and the cosmopolitan cross-section of society included foreign merchants conducting business, permanent residents from other lands, transient sailors who entered and departed with regularity, refugees fleeing war or persecution, and Renaissance artists seeking patronage from the wealthiest of Venetian society.

From home and abroad

The cosmopolitan nature of Venice's population provided fertile ground for the exchange of ideas, while commerce brought merchants and seekers of fortune to the city. Religious diversity contributed to a social fabric that was exceedingly multi-cultural.

While the Renaissance was born and nurtured in Florence, some 260 kilometres southwest, Venice was also home to notable artisans of the period. Somewhat influenced through contact with northern European artists, the Venetian School developed with the introduction of oil painting providing greater interpretation of subjects, primarily with the bold interplay between light and darkness or shadow. Oils could be blended together to produce depth and richness of colour that the earlier tempera medium could not match.

From 1450 through to the end of the 15th century, masters created art that were distinctly Venetian. These include Giovanni Bellini's oil and mixed media *Pieta* and *Christ Blessing*, as well as his brother-in-law Andrea Mantegna's tempera renderings of the *San Zeno Altarpiece* and *Christ As The Suffering Redeemer*. Mantegna was originally from the nearby city of Padua but became a leading member of the Venetian School. Titian, a renowned Renaissance master born in the Venetian province of Belluno, painted *The Assumption Of The Virgin* from 1516-1518. The masterpiece resides today in Venice's Basilica di Santa Maria Gloriosa dei Frari, and is perhaps the best known rendering of the mystical scene in Western art.

Venetian architecture evolved through the city's early existence from wooden structures to soaring brick and stone, as Eastern and Gothic styles remained alongside the revived and interpreted facades of ancient Greece and Rome. By the early 1500s, Venice had also become a centre of the printing industry in Europe, producing volumes of classic Greek and Roman literature and philosophy.

Time and place

Just as in Florence, the wealthy of Venice commissioned art and architectural projects on a grand scale. Painters and sculptors, including Michelangelo and Leonardo da Vinci, worked in the city at times during their legendary careers. Public and private buildings were continually being constructed and embellished. Homes, cathedrals, and civic plazas were adorned with sculpture and designs of local and visiting masters.

During its golden age, Venice was almost continually assailed by outside powers intent on plundering the city's wealth, seizing territory, or curbing its widespread influence. With its focus on protecting the maritime trade routes that provided its lifeblood, Venice constructed a powerful navy, defending itself at sea against the expansionist Ottoman Empire in the East. When the Ottoman Turks conquered Constantinople in 1453, the primary Venetian trading partner in the eastern Mediterranean was lost.

Subsequently, Venice turned inward toward the expansion of its territorial domain. Merchants adapted to overland trade and agricultural production; however, neighbouring city-states perceived such initiatives as threats and periodically responded with force.

Although military defeats did limit the growth of Venice, the city-state remained relatively prosperous and independent until the age of Napoleon, nearly 300 years after the assimilation of Renaissance culture contributed to the reshaping of an already ever-changing city.

Influential figures

Delve into the lives and livelihoods of some of the greatest minds the world has ever produced

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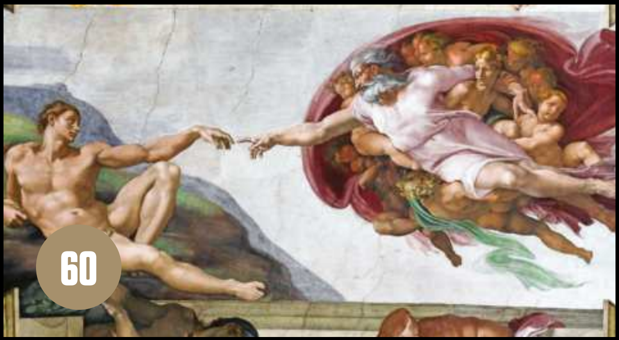

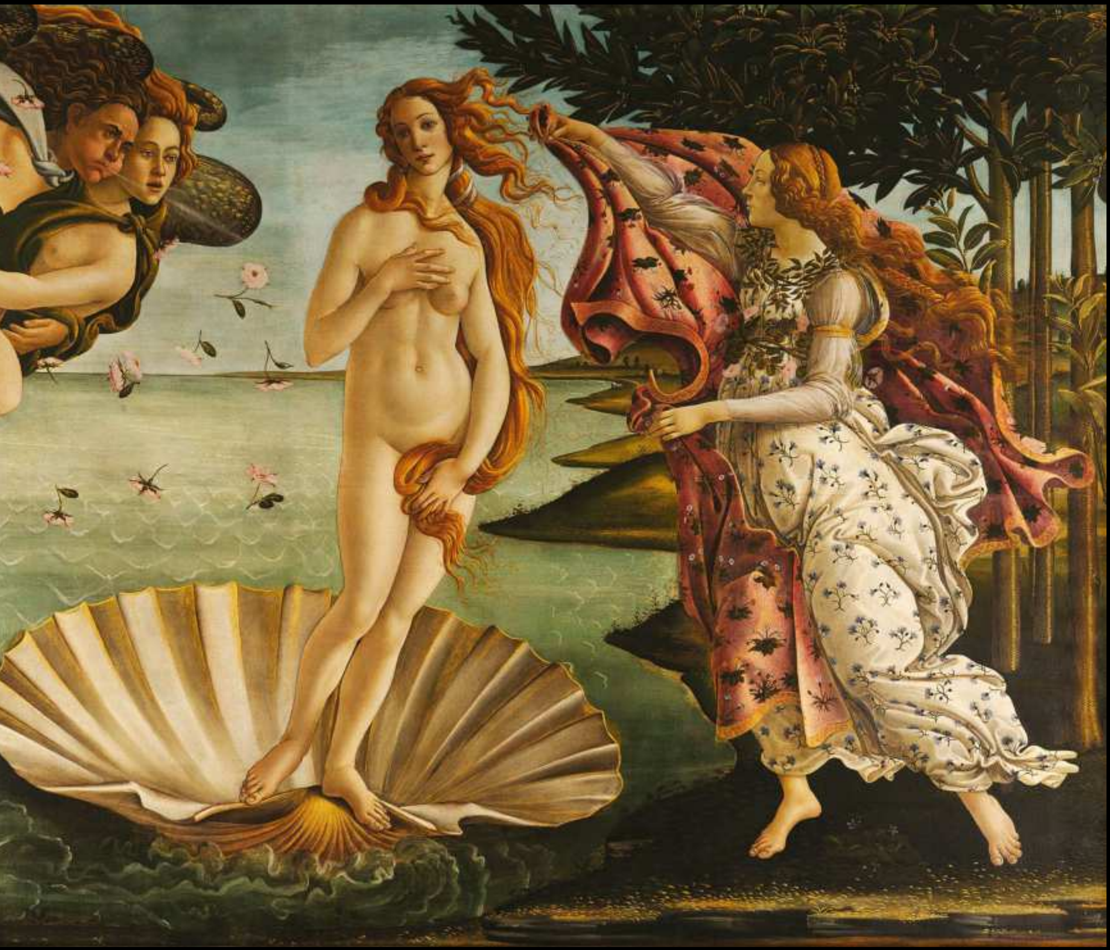

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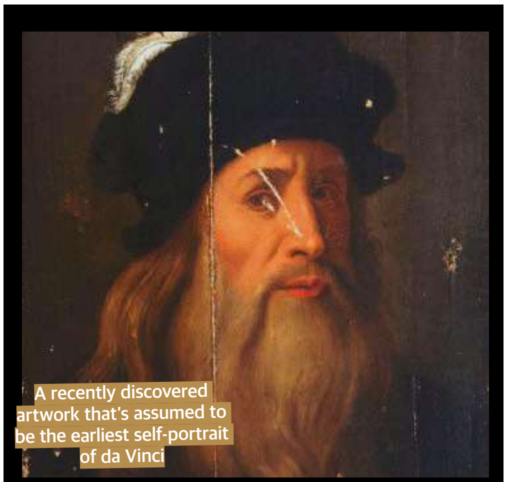
Renaissance Hall of Fame

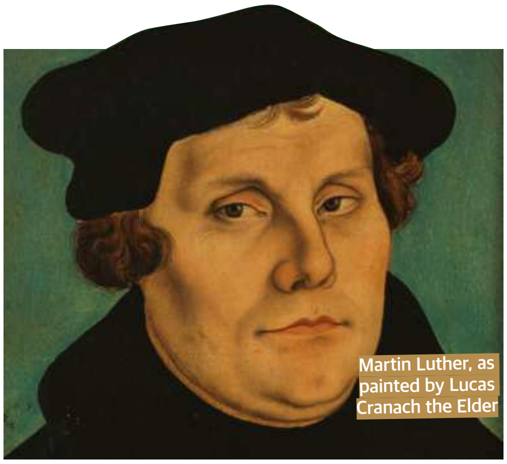
Witnessing the rebirth of culture, these key players of the Renaissance revolutionised Europe


A recently discovered artwork that's assumed to be the earliest self-portrait of da Vinci

LEONARDO DA VINCI

ITALIAN 1452-1519

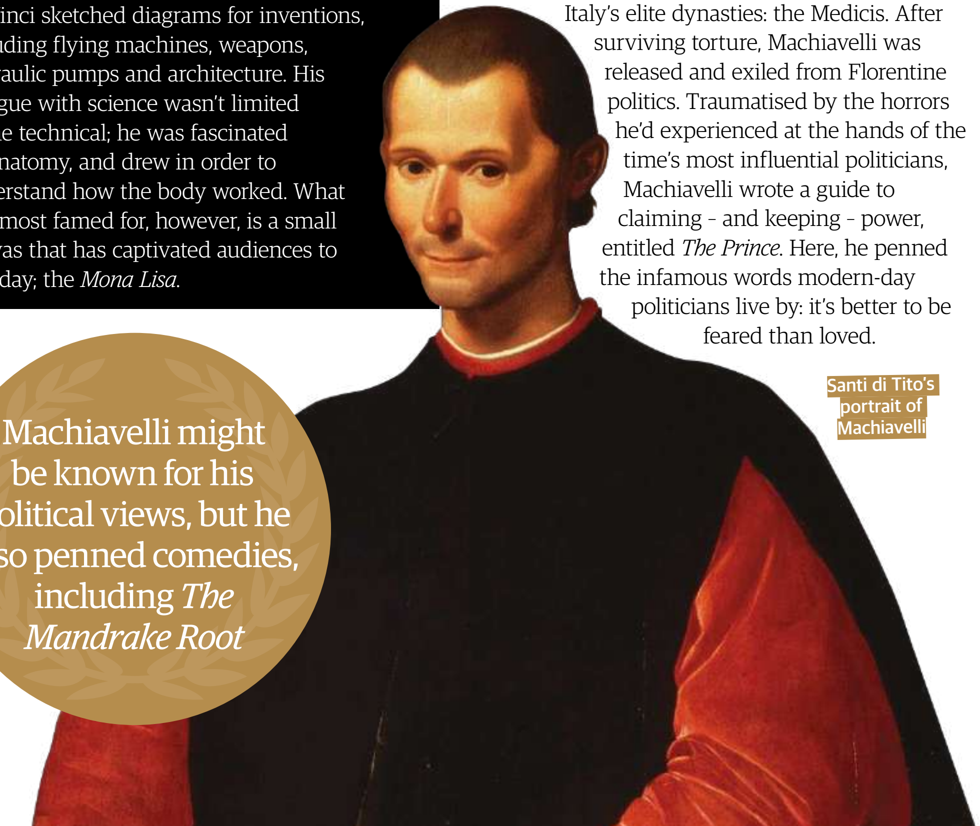
Considered the embodiment of a Renaissance man, Leonardo da Vinci wasn't just famed for his paintings - he also channelled the period's fascination with technology. Ahead of his time, da Vinci sketched diagrams for inventions, including flying machines, weapons, hydraulic pumps and architecture. His intrigue with science wasn't limited to the technical; he was fascinated by anatomy, and drew in order to understand how the body worked. What he's most famed for, however, is a small canvas that has captivated audiences to this day; the *Mona Lisa*.


Martin Luther, as painted by Lucas Cranach the Elder

NICCOLO MACHIAVELLI

ITALIAN 1469-1527

About 500 years ahead of his time, Machiavelli fathered the philosophy of modern-day politics half a millennia ago - and he paid the price. A high-ranking diplomat in Florence during the early 16th century, Machiavelli was later accused of conspiracy and tortured at the hands of one of Italy's elite dynasties: the Medicis. After surviving torture, Machiavelli was released and exiled from Florentine politics. Traumatised by the horrors he'd experienced at the hands of the time's most influential politicians, Machiavelli wrote a guide to claiming - and keeping - power, entitled *The Prince*. Here, he penned the infamous words modern-day politicians live by: it's better to be feared than loved.

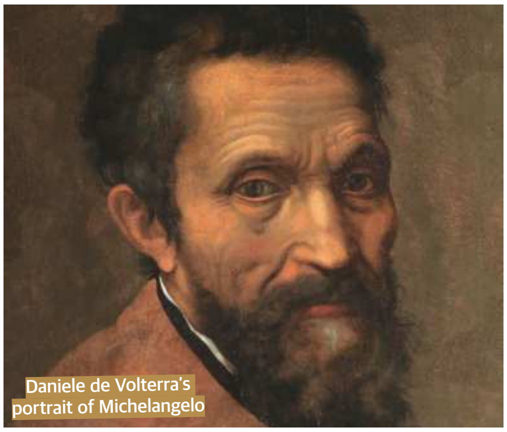

Santi di Tito's portrait of Machiavelli

Machiavelli might be known for his political views, but he also penned comedies, including *The Mandrake Root*

MARTIN LUTHER

GERMAN 1483-1546

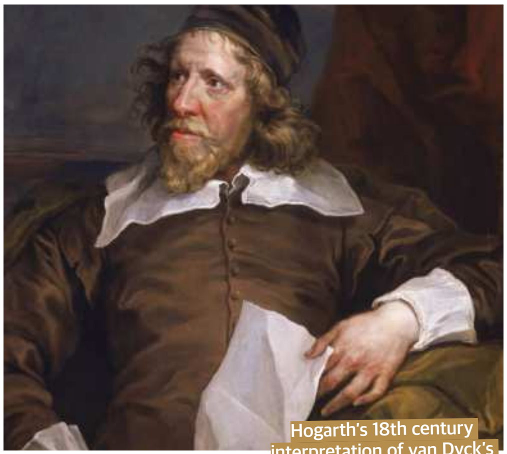
The Reformation might have revolutionised religion in England, but the movement really started in Germany when Martin Luther, a professor, took a stand against Catholic indulgences, where priests took money in return for promising God's favour. In writing his *Ninety-Five Theses*, Martin Luther essentially founded Lutheranism, a form of Protestantism that thrived across mainland Europe. As Martin Luther's preachings reached England, he was declared a heretic by Henry VIII, who himself would go on to reform his nation's religion.


Daniele de Volterra's portrait of Michelangelo

MICHELANGELO DI LODOVICO BUONARROTI SIMONI

ITALIAN 1475-1564

Few artists can claim the accolade of being the greatest creator of their lifetime, but Michelangelo is one man who can. Creator of some of the most famous works of all time, including the ceiling frescoes of the Sistine Chapel, the architecture of St Peter's Basilica, as well as the revered statue *David*, Michelangelo was celebrated even before his death, and the nickname that stuck during and after his life was Il Divino - the divine one. Under the guiding hand of the world's most feted artist, the Renaissance was slowly pushed aside, ushering in the period of Mannerist art.

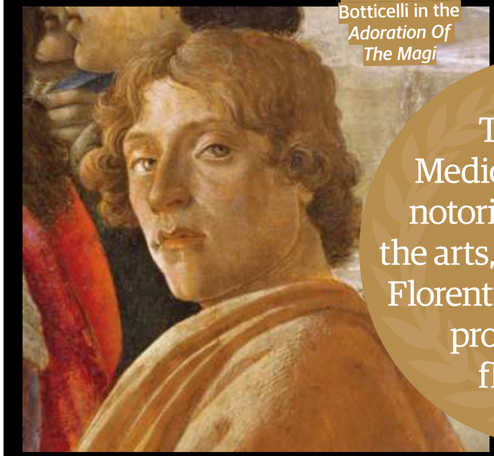


Hogarth's 18th century interpretation of van Dyck's portrait of Inigo Jones

INIGO JONES

WELSH 1573-1652

Art and philosophy clearly thrived during the Renaissance, but so too did architecture. Under the experienced hand of Inigo Jones, the movement was brought swiftly and successfully to Britain. Inigo Jones, the son of a cloth worker, showed promise for architecture and was sent by his patron to study in Italy. Here, Jones experienced the Renaissance in full swing and studied the Roman remains of Classical architecture. When Jones returned to Britain, he worked on some of the most celebrated buildings in London, including the Queen's House in Greenwich, and the Banqueting House of Whitehall.



An assumed self-portrait of Botticelli in the *Adoration Of The Magi*

SANDRO BOTTICELLI

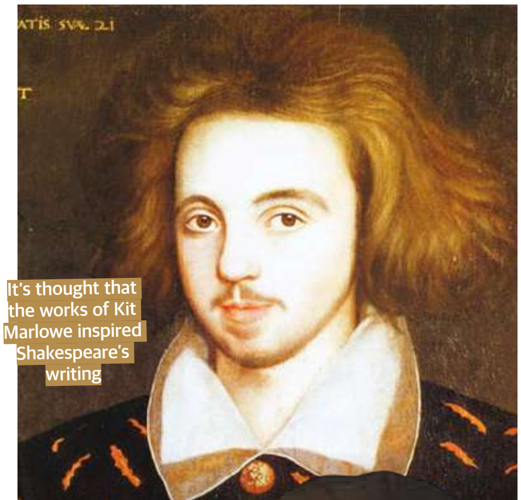
ITALIAN 1445-1510

Born in Florence, the beating heart of the Renaissance, Botticelli thrived and became one of the period's most celebrated painters. Under the patronage of Lorenzo de' Medici, he created some of the Early Renaissance's masterpieces, including *The Birth Of Venus* and *Primavera*. Sadly, as Michelangelo rose to fame, the notoriety of Botticelli plummeted – it wasn't until the 19th century that Botticelli's genius resurfaced.

CHRISTOPHER MARLOWE

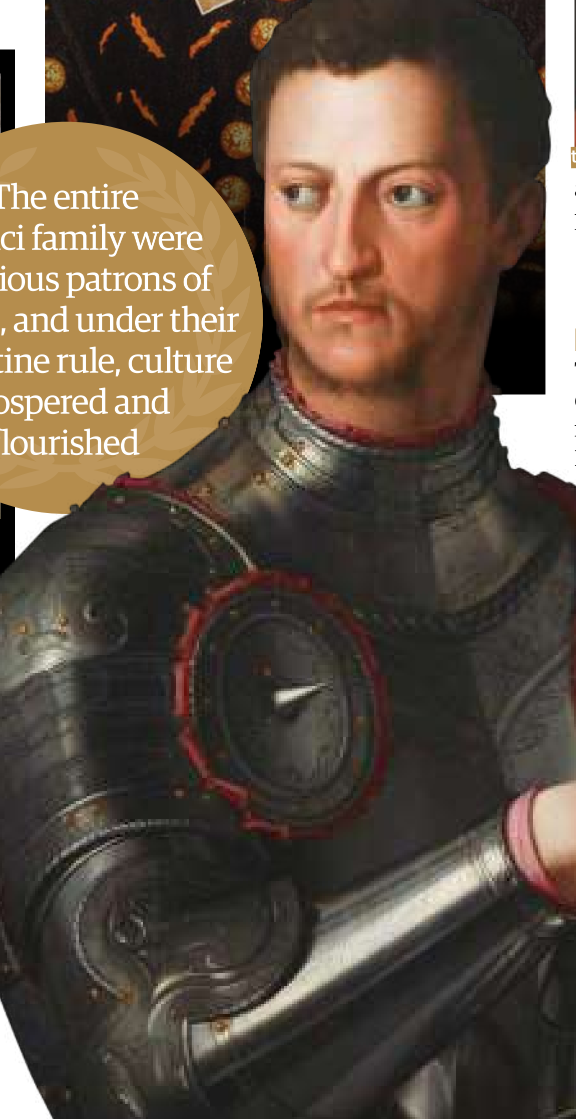
ENGLISH 1564-93

The son of a shoemaker and his wife, Christopher Marlowe thrived under Elizabethan rule, becoming one of the leading playwrights of his age. Yet his life is mired with mystery – some historians suggest that Marlowe was a spy for the queen, tutoring the young Arbella Stuart, who could've claimed the English throne after Elizabeth's death. To add intrigue upon intrigue, Marlowe was murdered in the streets at the age of 29, cutting his spy and/or literary career brutally short.



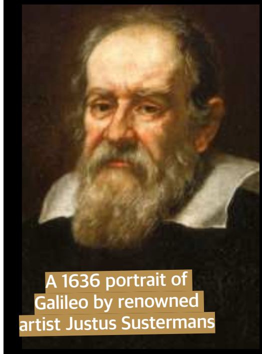
It's thought that the works of Kit Marlowe inspired Shakespeare's writing

> The entire Medici family were notorious patrons of the arts, and under their Florentine rule, culture prospered and flourished



GALILEO GALILEI

ITALIAN 1564-1642

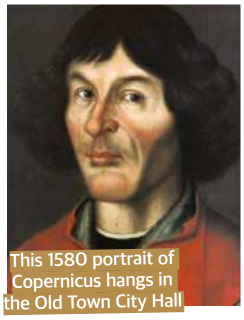


A 1636 portrait of Galileo by renowned artist Justus Sustermans

Copernicus might have died before he could face any backlash for his heliocentric views, but Galileo Galilei certainly bore the brunt of this belief. Condemned a heretic for his Copernican views, Galileo made strides in astronomy despite this, and became known as the father of observational science, as he created the first astrological telescope, with which he viewed four moons of Jupiter as well as our own Moon.

NICOLAUS COPERNICUS

PRUSSIAN 1473-1543



This 1580 portrait of Copernicus hangs in the Old Town City Hall

Up until the 16th century, Earth was the centre of the universe. That was until Copernicus, an astronomer and mathematician, published *De Revolutionibus Orbium Coelestium*, in which he presented the revolutionary idea that, in fact, Earth revolved around the Sun. Just months after his theory was published, however, Copernicus died.

COSIMO I DE' MEDICI

ITALIAN 1519-74

The patrons were just as important as the artists during the Renaissance, and none were so influential as Cosimo I de' Medici, ruler of Florence. From a long line of Medicis who had patronised the arts, Cosimo went one step further: he founded the Uffizi, now Italy's premier art gallery devoted to the Medici's vast collection. Not only does the gallery feature some of the finest examples of Renaissance painting, but the gallery was created by the hands of some of the finest architects in Europe, including Giorgio Vasari.

Angelo Bronzino's portrait of Cosimo I de' Medici in armour

Donatello

c.1386-1466

Italy's most influential artist of the 15th century took sculpture to breathtaking new levels, absorbing a broad array of influences to produce a style all of his own

Born in Florence in the late 14th century, Donato di Niccolò di Betto Bardi - or Donatello, as he was nicknamed by his family and as he is more famously known - paved the way for Renaissance art and left an indelible mark on the world of sculpture. The son of Niccolo di Betto Bardi, a member of the Florentine Wool Combers Guild, Donatello was educated in metallurgy at the home of the Martellis, a wealthy and influential Florentine family of art patrons that had close links with the Medici family. With training from a local goldsmith, Donatello learnt how to fabricate metals and other substances and it is likely that he also learnt how to sculpt from the stone carvers working on the Duomo (cathedral) in Florence around 1400. In 1403 he enlisted in the workshop of Lorenzo Ghiberti, a sculptor in bronze who, in 1402, had won a competition to design the doors of the Baptistery. Donatello assisted Ghiberti in creating those doors. Interestingly, Donatello struck up a friendship with Filippo Brunelleschi, the artist that Ghiberti had beaten in the competition, and the two travelled to Rome in 1407 to study classical art. Little is known about the trip, but in helping to excavate the ruins of ancient Rome, Donatello gained a deep understanding of ornamentation and classic forms. This, coupled with the tutelage of Ghiberti - who was a leading exponent in a style of sculpting known as International Gothic that consisted of soft, curved lines in the style of northern European art - had a great influence on Donatello that

Donatello's influence is still felt today

Top right: Donatello's later bronze *David* statue is considered to be his greatest masterpiece

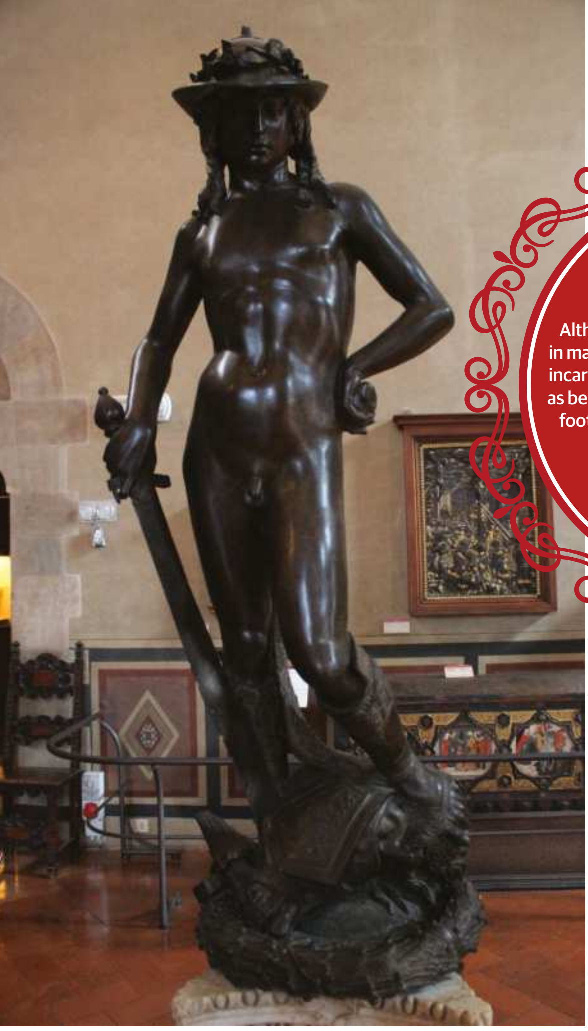
Bottom right: *Gattamelata*, Donatello's equestrian statue, may have courted controversy but it nevertheless proved to be hugely influential

DEFINING MOMENT

Joined the workshop of Lorenzo Ghiberti

In adopting his tutor's Gothic influences and love of bronze, Donatello would be able to refine his art and develop a style all of his own. He also forged friendships within the workshop that would help him expand his horizons and spread his reputation far further afield than his native Florence.

1403

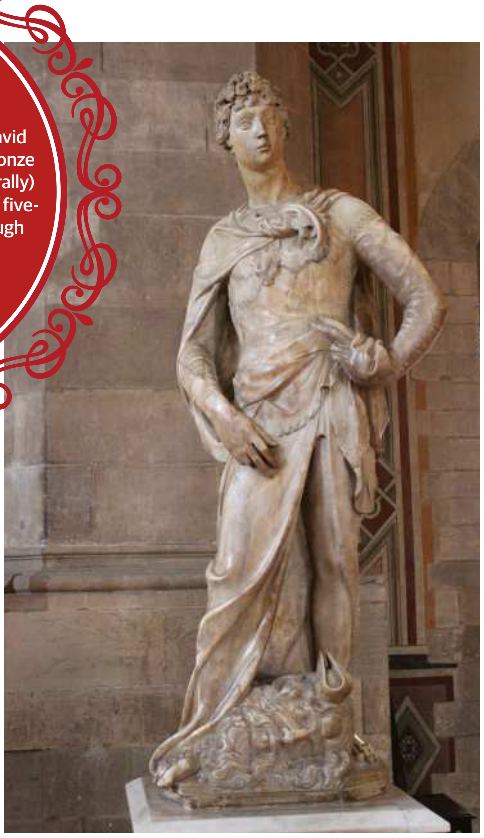


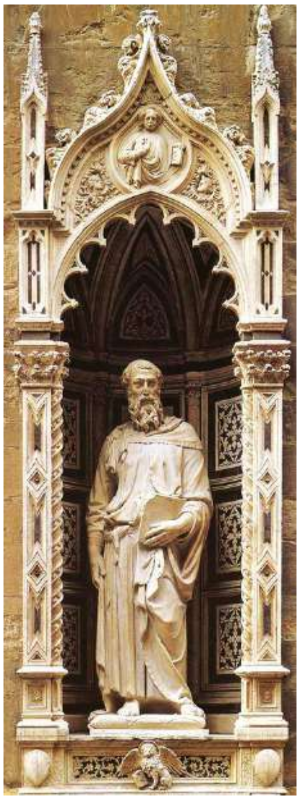
DEFINING MOMENT

The creation of David

Although he had created a statue of David in marble earlier in his career, it is the bronze incarnation that stands alone (quite literally) as being Donatello's finest creation. The five-foot-tall statue was a major breakthrough and was the first large scale, freestanding nude statue of the Renaissance, of which many more would ultimately follow.

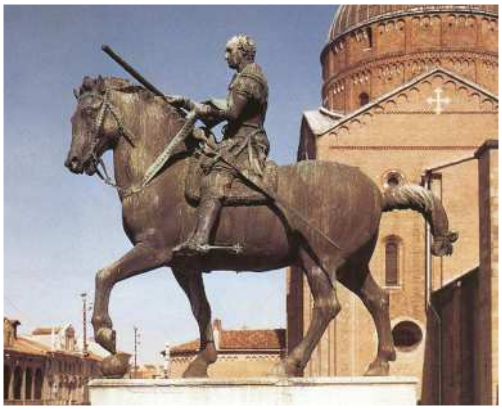
1430





Right: Taking the International Gothic style used by his tutor, Ghiberti, one of Donatello's earliest works was the expressionless marble statue of David

Far right: Donatello's *St Mark* sculpture on the exterior of Orsanmichele displayed a noticeable shift away from the Gothic style into a more classic style of drama and emotion



"This famous statue inspired a new wave of equestrian monuments across Italy"

exploded out of his work, none more so than his life-sized marble sculpture of David.

Back in Florence in 1408, Donatello was tasked with creating the statue for placement in the city's cathedral. The work certainly reflected the artist's Gothic influences, with its long, graceful lines and expressionless face. As Florence was engaged in a bitter struggle with the king of Naples at the time, the finished statue was instead placed outside the Palazzo Vecchio (town hall) as an inspiring symbol of defiance. Interestingly though, Donatello's *David* would be replaced by Michelangelo's sculpture of the same subject from the 16th century.

Maturing into his art, Donatello began to leave his Gothic influences behind and develop a style all of his own and between 1411 and 1413, he sculpted the marble figure *St Mark*, which was placed in a niche on the exterior of Orsanmichele, the church of Florentine guilds. This was followed up in 1415 by the marble statue *St John The Evangelist* for the Duomo in Florence and both sculptures display a noticeable shift away from the Gothic style into a more classical style that conveys drama and emotion. Donatello honed his skills still further in a series of five prophet statues commissioned for the niches of the campanile (bell tower) of the Duomo. These statues garnered great respect thanks to the way they occupied measurable space. Previously European sculptors placed their figures against a flat background, but Donatello placed them within their own natural space and was able to accurately convey joy, sorrow and suffering in the faces of his figures.

At around 1425, Donatello once again ventured to Rome, this time in partnership with the Italian sculptor and architect Michelozzo (also a protégé of Ghiberti). Here they created a series of architectural-sculptural tombs, among them the tomb of Antipope John XXIII and the tomb of Cardinal Brancacci, which would influence many of the later Florentine tombs. It was only when Donatello started to work with bronze in the 1430s, though, that his reputation soared and he became an artist in demand beyond the Florentine walls.

Donatello enjoyed a close friendship with Cosimo de' Medici, grandfather of Lorenzo, and in 1430 Cosimo the Elder, himself an eminent art patron, commissioned Donatello to create another statue of David, this time in bronze. This statue is perhaps Donatello's most famous work and was the first large-scale, free-standing nude statue of the Renaissance. Exquisitely proportioned and expertly poised, the bronze statue was conceived independently of any architectural surroundings that might support it. The statue represented civic virtue triumphing over brutality and occupied the centre of the courtyard of the Medici palace in Florence where it stood until the expulsion of the Medici in 1496 (when it was moved to the courtyard of the Palazzo Vecchio before eventually being moved to Bargello).

Donatello was given another significant commission in 1443, when he was summoned to the city of Padua by the family of the famous mercenary Erasmo da Narni, who had passed away earlier that year. For seven years the artist toiled away on what would become *Gattamelata*, a bronze statue showing Erasmo riding a horse in full battle dress. This was the first equestrian statue to be cast in bronze since the Romans and caused some controversy as statues of this type were usually reserved for rulers and kings, not mere military warriors. Nevertheless, this famous statue inspired a new wave of equestrian monuments across Italy and Europe in subsequent centuries.

During the 1450s, Donatello returned to Florence and continued to work on commissions from wealthy patrons and his friendship with the Medici family earned him a pension to live on in his latter years. Among his final projects were twin bronze pulpits for San Lorenzo but he died of unknown causes on 13 December 1466, leaving the work incomplete. The pulpits were, however, completed by his student, Bertoldo di Giovanni and, fittingly, Donatello was buried in the Basilica of San Lorenzo alongside his great patron, Cosimo de' Medici.

Sandro Botticelli

c.1445-1510

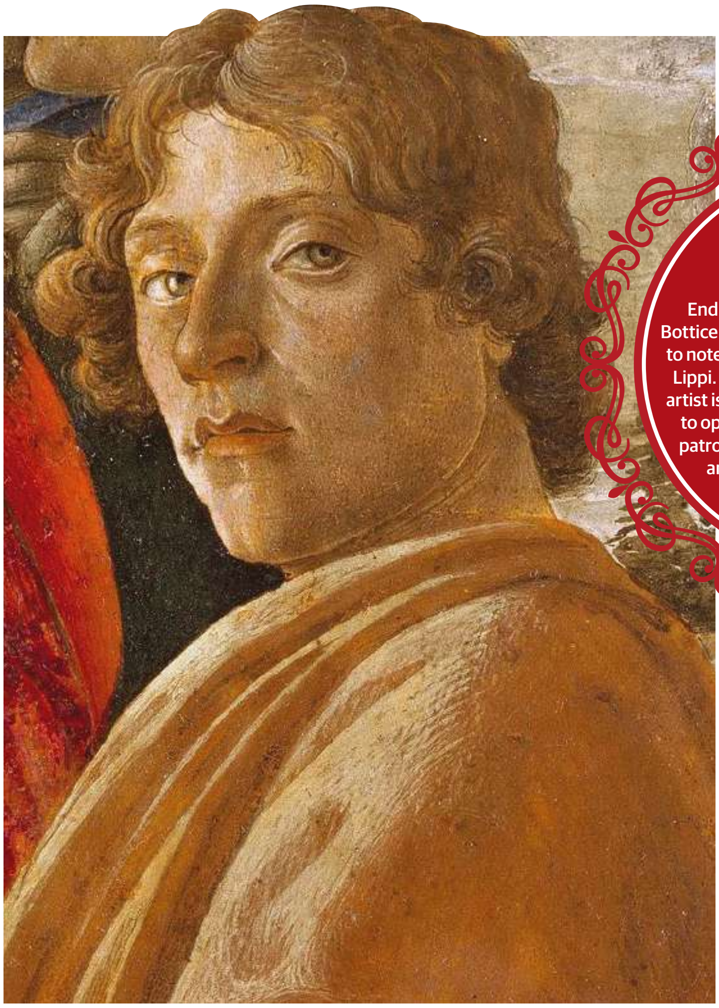
Perhaps the foremost artist of the early Renaissance, Sandro Botticelli interpreted religious, mythological, and romantic perspectives

His artistic works are renowned the world over. His frescoes adorn the wondrous Sistine Chapel. His place among the towering artistic figures of the Renaissance is unassailable. Yet, Sandro Botticelli experienced both fame and, later, obscurity in his own lifetime.

The author of such great works as *The Birth Of Venus* and the *Adoration Of The Magi*, Botticelli rose to the heights of patronage and popularity during the late 15th century only to be overshadowed by the innovative methods and techniques of other masters such as Perugino, Francesco Francia, Michelangelo Buonarroti, Raphael, and Leonardo da Vinci. His work then lay largely forgotten for nearly 400 years.

Born in Florence circa 1444, Alessandro di Mariano Filipepi was the son of a tanner. He first apprenticed as a goldsmith in the workshop of Maso Finiguerra and then transitioned to the studio of Fra Filippo Lippi, a well-known artist in the city. The nickname 'Botticelli' translates to English as 'little barrel' or 'small wine cask,' and is attributed to his brother, Giovanni, who made his living as a pawnbroker in Florence.

Although relatively little is known of the early lives of some Renaissance masters, a primary source of information is the landmark *Lives Of The Most Excellent Painters, Sculptors, And Artists*, written by Giorgio Vasari, an Italian architect, artist, and author of the 16th century. According to Vasari, Botticelli was a precocious child who



Left: This self-portrait of early Renaissance artist, Sandro Botticelli, is a detail from his famed painting The *Adoration Of The Magi*

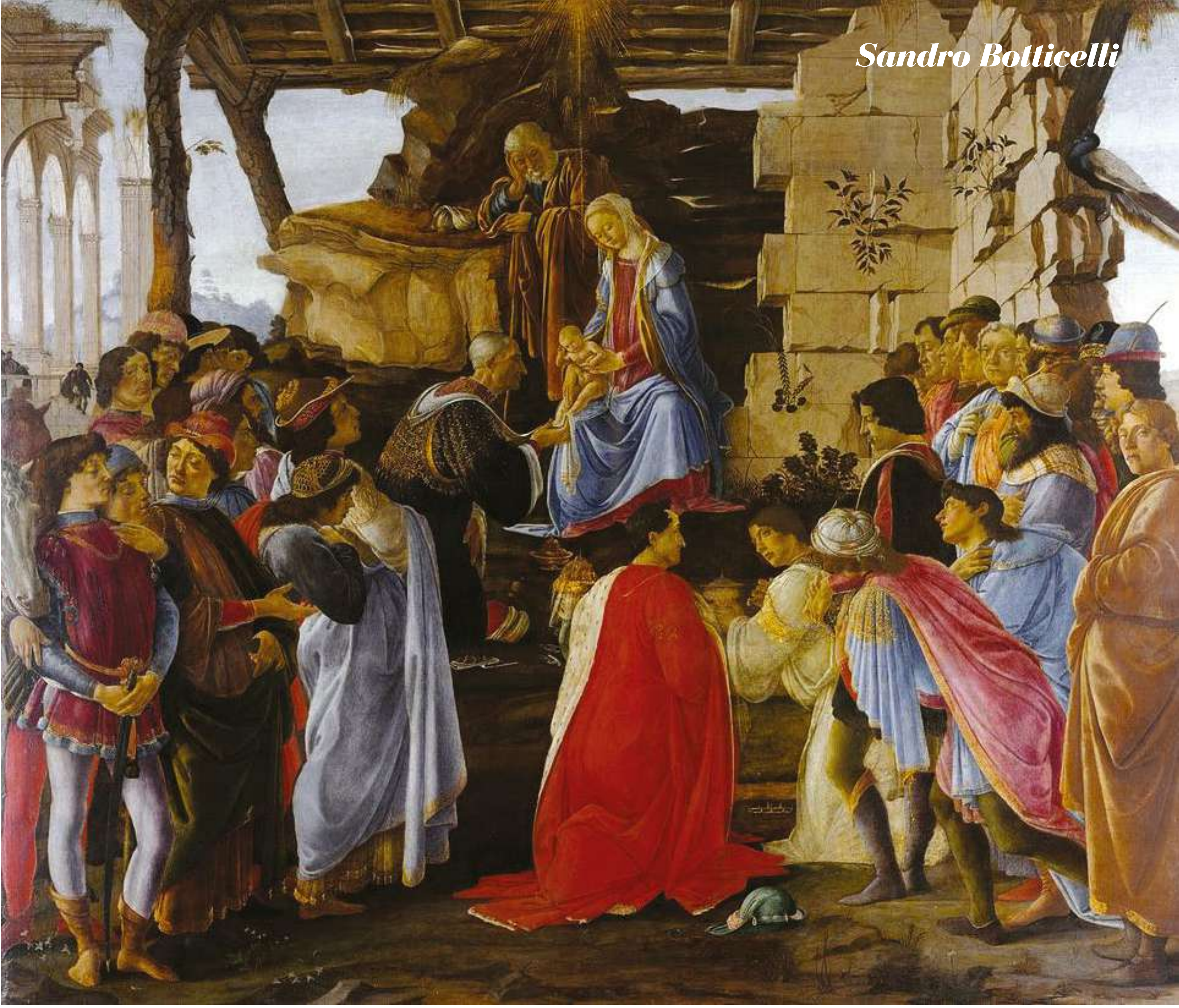
DEFINING MOMENT

Botticelli's studio

Ending a goldsmithing apprenticeship, Botticelli spends eight years as an apprentice to noted early Renaissance artist Fra Filippo Lippi. At the age of only 15 or 16, the young artist is established well enough in Florence to open a studio of his own, cultivate the patronage of the powerful Medici family, and confirm his status among the city's artistic elite.

1462-1470

Right: *Adoration Of The Magi* (c.1475-1476) features several members of the Medici family



found attending school a boring enterprise. He was restless, energetic, and known for his rapier wit. His enjoyment of practical jokes and probable hyperactivity gained the young man a reputation for unruliness, and he was also believed to have suffered ill health from an early age.

Apparently, his father recognised talent in the young Botticelli, and when goldsmithing was not to his liking, the boy went on to Lippi's tutelage as an apprentice painter. Lippi helped Botticelli to hone his own natural skills, and took it upon himself to introduce fresco, panel painting and linear perspective to his pupil. Botticelli then began his artistic career with commissioned paintings such as altarpieces and frescoes adorning the walls of local cathedrals. Although it is possible that he travelled with Lippi to Hungary and worked with his master under a commission from Archbishop Vitez Janos, this has never actually been confirmed.

By 1470, no more than 15 or 16 years of age, Botticelli was gradually coming into his own as an artist. His work combined the grace and subtle usage of colour that Lippi had taught him as an apprentice. The first of his paintings that can be dated with accuracy was finished in that year as well. *Fortitude*, composed in tempera on wood, completed the seven panels depicting the Virtues that grace the Tribunal Hall of the Piazza della Signoria in Florence.

The breadth of Botticelli's work included the sacred and mythological styles along with the Neo-Platonic, which combined elements of both and broadened his appeal to potential purchasers and patrons. In 1472, he became a member of the Compagnia di San Luca, the artists' guild in Florence. Fra Filippo Lippi, to whom Botticelli owed so much, died in 1469, and subsequently the pupil took on the teacher's son, Filippino Lippi, as his own apprentice.

Botticelli completed numerous portraits, including *Portrait Of A Young Man Holding A Medal*, circa 1475, depicting a youth whose identity remains a mystery, holding a medal struck with the likeness of Cosimo de' Medici, patriarch of the Florentine political dynasty that fostered the flowering of the Renaissance. He also finished *Portrait Of A Young Woman*, said to depict Simonetta Vespucci, one of the most beautiful young women of the age, completed in the mid-1480s.

Although he succeeded in establishing his own recognisable style, Botticelli undoubtedly benefitted from the contacts he gained through his association with Fra Filippo Lippi. It is likely that Lippi introduced Botticelli and his work to members of the Medici family, who had acquired their fortune in the financial industry and parlayed that into hegemony throughout the region.

Botticelli painted numerous works commissioned by this influential family, particularly upon the requests of brothers Lorenzo and Giuliano de' Medici, and earned notoriety, money, and prestige. Among these works is the well-known *Primavera*, or *Allegory Of Spring*, circa 1482, painted in tempera on wood for the Medici family villa at Castello outside Florence.

DEFINING MOMENT

To the Sistine Chapel

Botticelli is summoned to the Vatican by Pope Sixtus IV along with other prominent artists of the early Renaissance to adorn the walls of the Sistine Chapel with religious themed frescoes. Within a year, Botticelli's contribution, three frescoes depicting the life of Moses, the rebellion of the Hebrews against Moses and Aaron, and the Temptation of Christ, are completed.

1481-1482

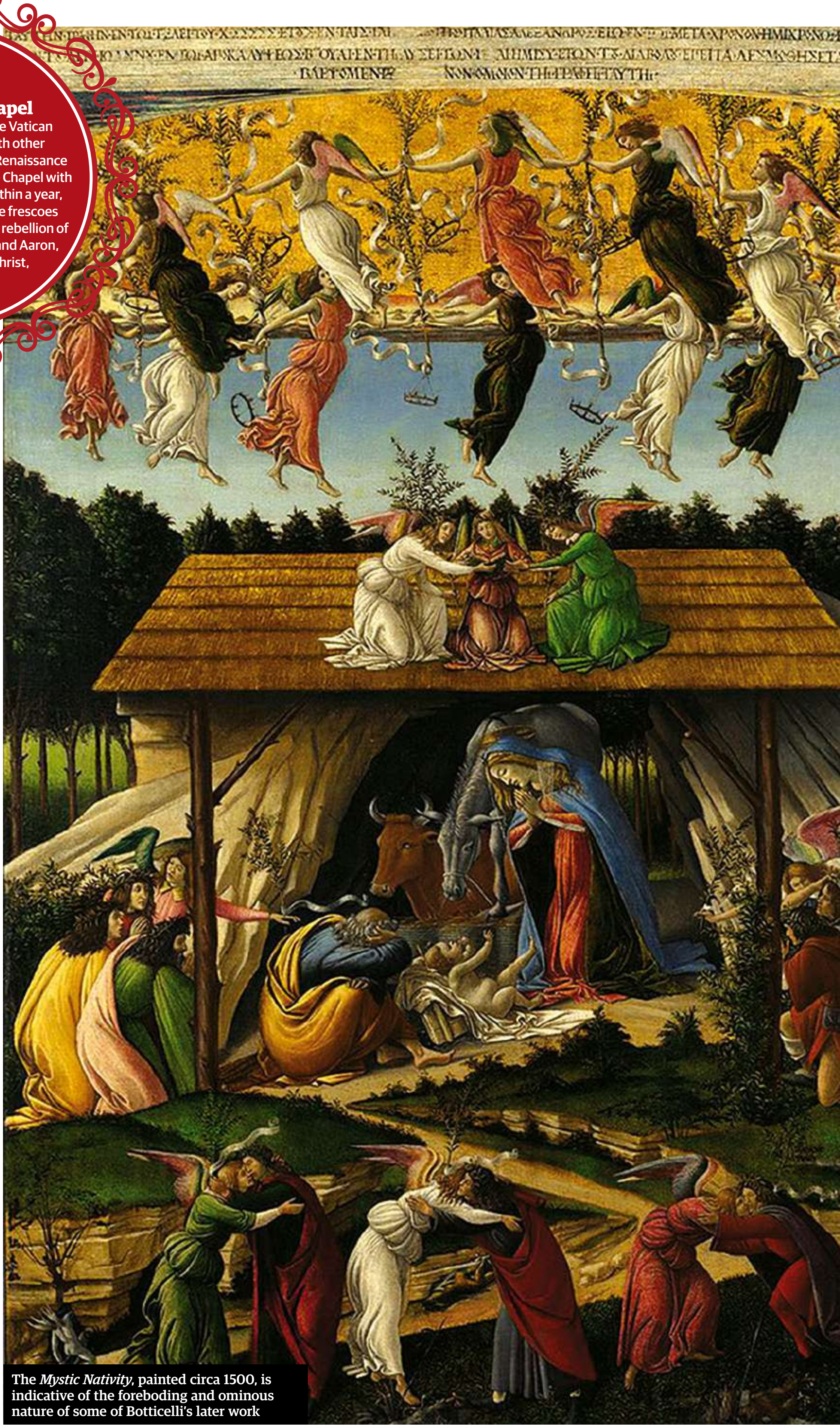
As his popularity among the people of Florence and his patronage from the Medici family increased, Botticelli's fame spread throughout the Italian countryside. His renown is confirmed by the commission from Pope Sixtus IV in 1481 to adorn the walls of the recently completed Sistine Chapel at the Vatican. Along with three other notable artists, Domenico Ghirlandaio, Cosimo Rosselli, and Pietro Perugino, Botticello travelled to Rome and produced frescoes for the chapel, including scenes from the life of Moses, the rebellion of the Hebrews against Moses and Aaron, and the Temptation of Christ, along with seven papal portraits. The detail in Botticelli's Sistine Chapel frescoes is absolutely remarkable, particularly the portrayal of Zipporah, a daughter of Jethro, future father-in-law of Moses, and young woman with firewood coming forward during a Hebrew ritual. Michelangelo began his epic work on the Sistine Chapel ceiling nearly three decades later.

Botticelli's frescoes were completed within a year, and the artist returned to Florence. This is the only documented period during which he was away from the city. He never married and was believed to have lived with his family throughout his life.

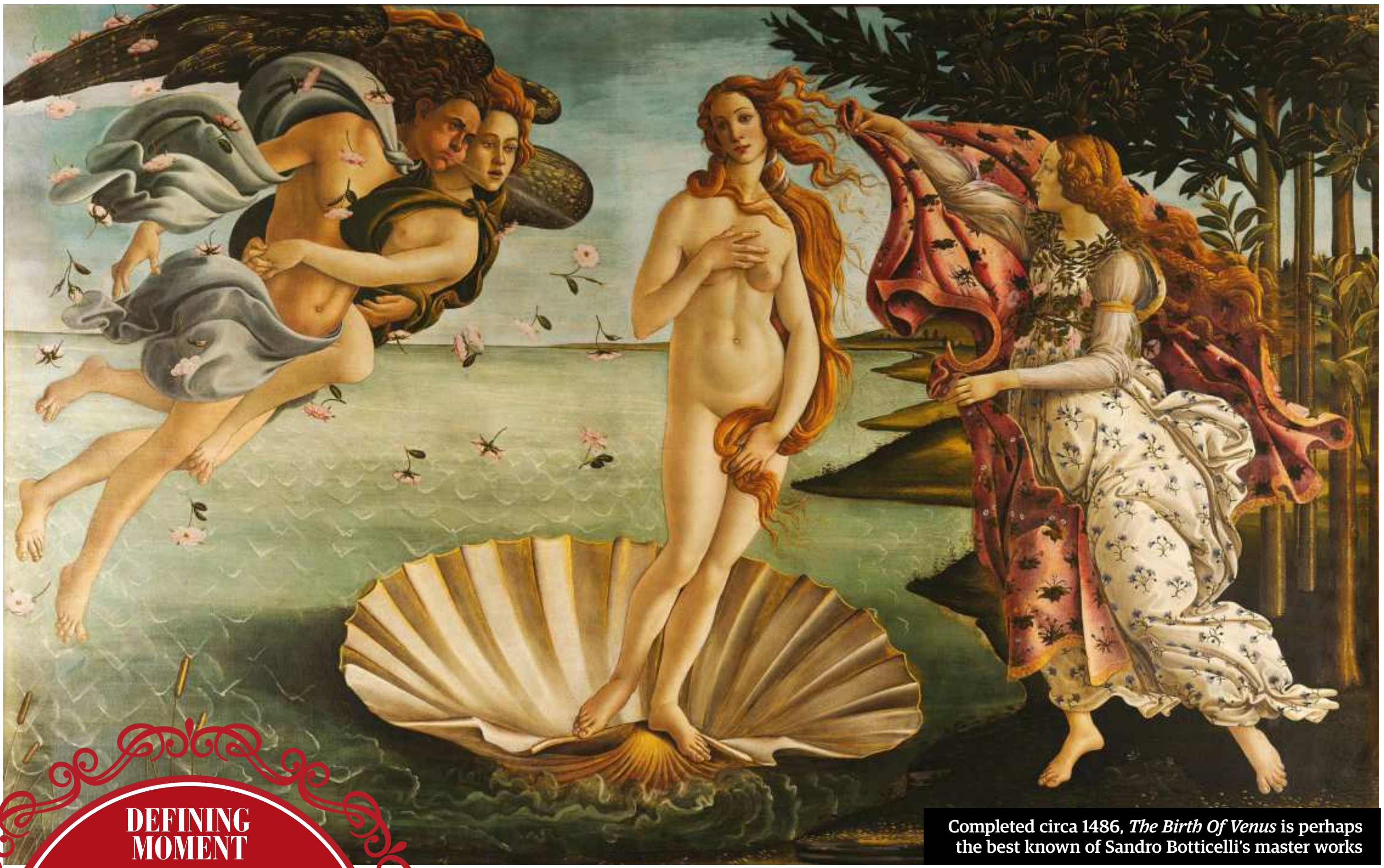
Botticelli flourished for a few more years. In 1481, some of his drawings were engraved to illustrate the first printed edition of Dante Alighieri's *The Divine Comedy* that was published in Florence, and roughly 15 years later he completed a portrait of a stern Dante, probably as a decoration for the library of a Florentine scholar. By 1486, the artist had finished the masterpieces *Venus And Mars* and *The Birth Of Venus*.

As the dawn of the 16th century approached, the influence of the Medici family began to wane in Florence. After 1494 its power was extinguished. During the period, Botticelli's work also took a rather abrupt turn from the graceful and colourful pieces of his early career. A simpler, smaller scale replaced its spirit with heavy and even crude representations that conveyed dark moral and religious implications. The striking change occurred as the soaring beauty and dramatic passion of Michelangelo and Leonardo da Vinci were starting to be noticed.

Much of this departure from Botticelli's artistic past is attributed to him becoming a follower



The *Mystic Nativity*, painted circa 1500, is indicative of the foreboding and ominous nature of some of Botticelli's later work



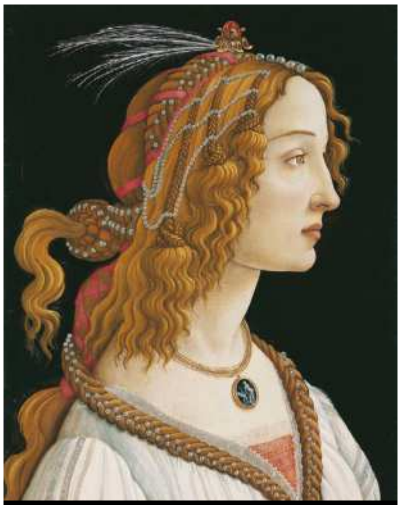
Completed circa 1486, *The Birth Of Venus* is perhaps the best known of Sandro Botticelli's master works

DEFINING MOMENT

Influence of Savonarola

During his later years, Botticelli comes under the influence of the radical Dominican friar Girolamo Savonarola, whose crusade against corruption in the Roman Catholic Church and the concentration of power with the Medici family impacts the artist's work. Botticelli may himself have burned some of his paintings during the Bonfire of the Vanities that occurred in 1497.

1492-1510



Portrait Of A Young Woman, c.1484, may depict Simonetta Vespucci, known as one of the most beautiful women in Florence

of the fiery and fanatical Dominican friar Girolamo Savonarola, whose ascetic morality and blistering criticism of a Roman Catholic Church that he deemed corrupt fuelled the flames of political and religious unrest in Florence. Ironically, Savonarola had come to Florence largely due to a request from Lorenzo de' Medici; however, the friar soon became the chief critic of the family, precipitating its downfall and the founding of a republic.

While Savonarola railed against the establishment in Renaissance Florence and prophesied the coming of a second Great Flood and a renewal of the Christian church, King Charles VIII of France led an army that invaded Italy and threatened to occupy Florence, seemingly lending credence to the friar's dark vision.

The notorious Bonfire of the Vanities, during which many objects such as books, works of art, cosmetics, playing cards, and other items believed sinful were consigned to the flames, occurred on 7 February 1497. Some of Botticelli's early works may well have been consumed in the blazing pyre that resulted from Savonarola's influence. Perhaps this explains, at least partially, the fact that much of Botticelli's secular paintings are missing to this day. Scholars have identified only eight such works.

> "Some of Botticelli's early works may have been consumed in the blazing pyre that resulted from Savonarola's influence"

As to the nature of Botticelli's final years, debate still continues. While some historians firmly assert that he became despondent and died penniless, others believe that he continued to remain prosperous and even accepted challenging commissions that other artists declined. He died at approximately 65 years of age on 17 May 1510, and was buried in the Church of Ognissanti in central Florence, which also is home to his fresco *St. Augustine In His Study*.

With the rise of the High Renaissance period in the 1490s, Botticelli's remarkable work quietly faded into obscurity. It continued to lay dormant and virtually unappreciated for approximately four centuries. All that changed in the late 1800s, when John Ruskin, a prominent British art critic of the Victorian era, began to reevaluate Botticelli's contributions to Renaissance art. Pre-Raphaelite artists gained a renewed appreciation of the master whose work has since been elevated to epitomise the artistry of the early Renaissance.

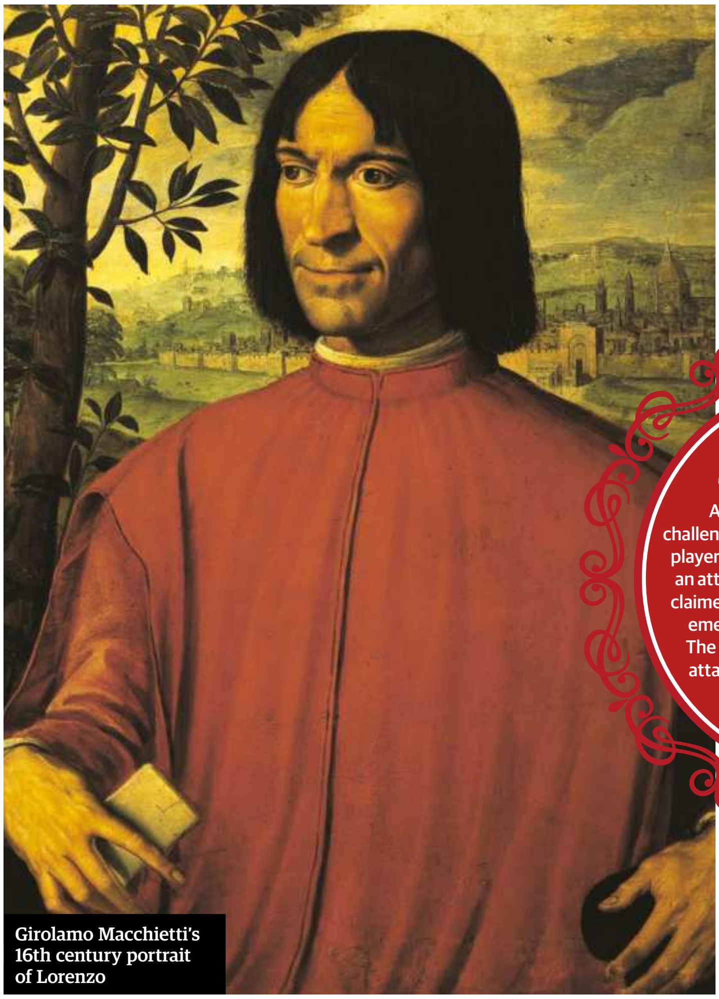
Lorenzo de' Medici

1449-1492

Statesman, ruler and patron of arts and letters, 'il Magnifico' did more than most to usher in the Renaissance and put Florence on the artistic map

Lorenzo de' Medici was born in Florence on 1 January 1449 and was son of Piero the Gouty. In his childhood, Lorenzo displayed a high level of intelligence, a curious mind and a prodigious memory alongside a healthy sense of humour. Cosimo the Elder, Lorenzo's grandfather, was particularly fond of the boy and helped to ensure the avenues to study and expanding his horizons were always open - especially as his own son, Piero was weak and the elder Medici feared he wouldn't long survive him. As such, Cosimo took it upon himself to groom the young Lorenzo for authority and ensured he enjoyed the very best education available, learning Greek, Latin and philosophy and being sent to attend the Platonic Academy of Marsilio Ficino, where he learned to sing, play the lyre, and develop a deep-rooted love for poetry and the arts.

At the age of 16, having spent countless hours in the presence of respected statesmen and humanists by way of informal schooling, Lorenzo entered politics, all the while writing sonnets and poems in his spare time. In 1469, on the advice of his father, Lorenzo was wed to Clarice Orsini, establishing links with one of Rome's most powerful and noble families. Later that same year, Lorenzo's father passed away and the 20-year-old Lorenzo assumed power of Florence along with his brother, Giuliano. Upon his accession to power, Lorenzo immediately let it be known that he intended to follow the example set by his grandfather and father in using constitutional methods to rule from behind the scenes without holding any public office.



Girolamo Macchietti's 16th century portrait of Lorenzo

Top right: A 1480 bust by Verrocchio better illustrates Lorenzo's distinctive features

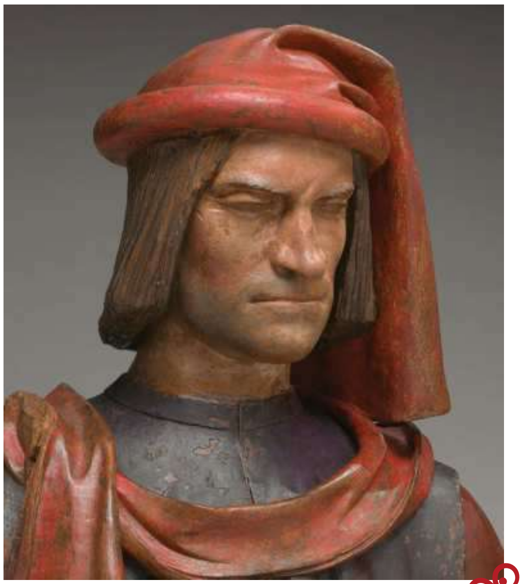
Bottom right: This monogram in the Biblioteca Medicea Laurenziana pays homage to Lorenzo's great influence in expanding the works contained in the Florence library

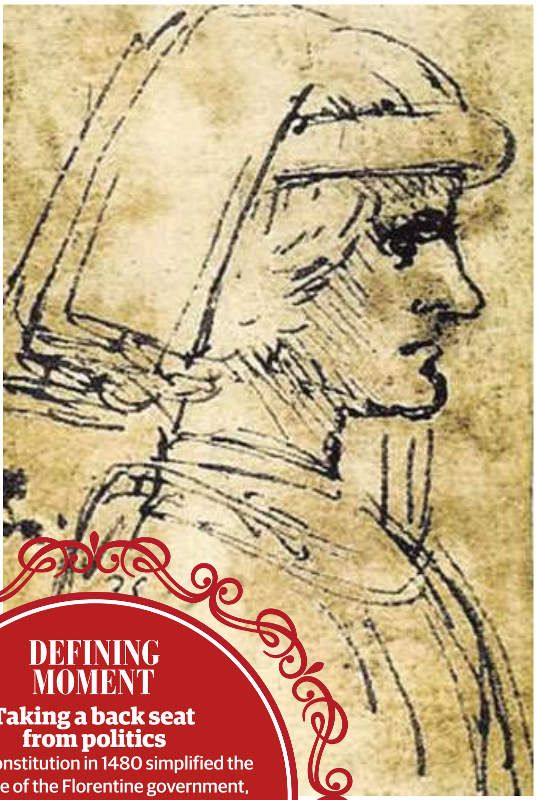
DEFINING MOMENT

The Pazzi conspiracy

After falling foul of the papal and challenged for power by Florence's other big players, the Pazzi family, Lorenzo survived an attempted assassination plot (one that claimed the life of his brother) and actually emerged in an even stronger position. The people of Florence literally tore his attackers limb from limb in defence of their leader.

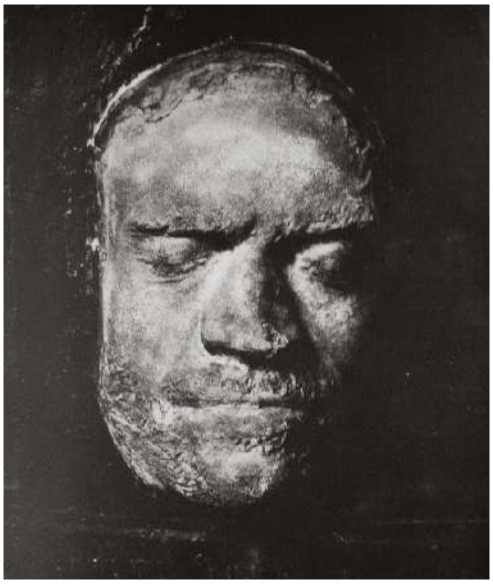
1478





Left: Leonardo da Vinci sketched his image of Lorenzo between 1483 and 1485. Da Vinci also sketched the archbishop Francesco Salviati being hanged during the Pazzi Conspiracy

Below: Lorenzo's death mask of 1492 showed him to have a heavy face with a large, flat nose. His dignity, charm and wit is reported to have laid in his manner rather than in his appearance



DEFINING MOMENT

Taking a back seat from politics

A new constitution in 1480 simplified the structure of the Florentine government, freeing up Lorenzo to indulge in his other great passions; the arts and letters. In the final decade of his life, Lorenzo spent much of his family's fortune on patronising the great writers and artists of the day, almost single-handedly ushering in the Renaissance.

1480

Lorenzo's fledgling years in rule were a great success. Not only did he reach an agreement with Pope Sixtus IV to handle papal finances, but he saved Florence from famine following a bad harvest by importing large quantities of grain. He was a man of the people and they, in turn, lavished praise on him.

However, Lorenzo's relationship with the church took a downturn as a result of him forging an alliance between Florence, Venice and Milan, thus marginalising the church that was seeking to expand the papal territory. And the pope wasn't alone in his contempt for the Medici, as Florence's other power family, the Pazzi – who ran the city's largest bank – were striving to usurp the Medici and seize control of the city. The Pazzi allied with the pope and, through their bank, loaned him the money to purchase strategic land in Romagna, a region in northern Italy, to strengthen the papal's position. In retaliation for this slight, Lorenzo thwarted the pope's efforts to appoint Francesco Salviati, an ally of the Pazzi, as archbishop of Pisa by refusing to acknowledge him. As a result, Pope Sixtus IV, his nephew Girolamo Riario and Francesco Salviati entered into a conspiracy with the Pazzi family to assassinate the Medici brothers. The deadly plot was carried out during Easter mass on 26 April 1478 at the cathedral in Florence. A group of men fell on Giuliano de' Medici and stabbed him 19 times during the mass. Lorenzo managed to escape with non life-threatening wounds and took sanctuary within the building. Unable to reach Lorenzo through a locked door, the conspirators left the cathedral and attempted to capture the town hall. However, they were relentlessly pursued by an angry mob of Florentine citizens and killed – Salviato himself was hanged from the wall of the town hall (this moment was captured in a sketch by Leonardo da Vinci). In retaliation for the brutal and public execution of the archbishop, the pope enlisted the king of Naples to attack the city. But before this full-scale war commenced, Lorenzo surrendered to the king and dissuaded him from his plan – a move that strengthened the Medici's position in Florence. Lorenzo even managed to repair his relationship with Sixtus in 1480 and peace was declared once more.

> "He was a man of the people and they, in turn, lavished great praise on him"

After surviving the deadly plot and emerging with increased prestige and with the unwavering support of his people (he was referred to as 'the needle on the Italian scales'), Lorenzo appointed the Council of Seventy to deal with matters of state while he set about embracing the arts in a period that coincided with Florence's greatest artistic contributions to the Renaissance. In what turned out to be the final decade of his life, Lorenzo paid the painters Sandro Botticelli, Domenico Ghirlandaio and Fra Filippo Lippi handsomely to add beauty to the city and sent the humanist John Lascaris and the poet Angelo Poliziano off in search of manuscripts to bolster the city's libraries. Shrewdly recognising that the swelling of his city's libraries couldn't be achieved purely through acquisitions, Lorenzo was an early champion of the printing press and encouraged its use to copy and distribute the great literary works of the era.

Though Lorenzo himself contributed more than anyone to establishing Florence as one of the great artistic hotspots of the Renaissance, it came at a considerable cost to his family's fortunes. But his patronage of the great artists, architects and writers of the time had long-lasting benefits. The famous Platonic Academy frequently met at Lorenzo's palace, where Lorenzo proved intellectually equal to the likes of Giovanni Pico della Mirandola and Marsilio Ficino in the lively philosophical conversations that took place. Lorenzo also opened a school of sculpture in his garden of San Marco and one of its star pupils was nurtured and raised in the palace as if a member of the family. That youngster was a 15-year-old Michelangelo.

Lorenzo de' Medici died on 9 April 1492, at the start of an exciting new era of discovery, but Lorenzo the Magnificent did more than anyone to usher in the artistic and cultural shifts that would herald the dawn of fantastic new possibilities.

Hieronymus Bosch

c.1450-1516

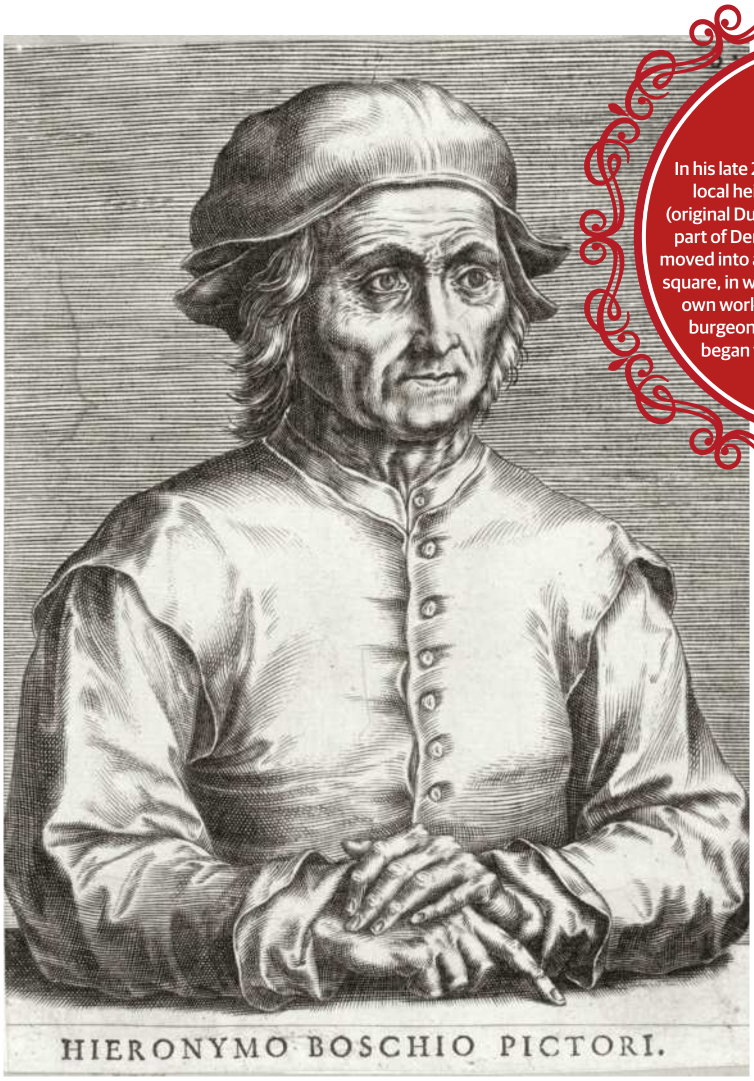
From the unassuming surrounds of a mercantile Dutch city, a painter of unusual talents conjured some of the most disturbing images of the Renaissance

The year is 1463 and the city of 's-Hertogenbosch is ablaze. A small fire originating in Verwersstraat, to the south of the centre, had quickly got out of control and spread north. In a matter of hours much of the city had been engulfed in flames - pillars of fire rose from blackened timber buildings, terrified citizens fled with what possessions they could gather, and a thick cloud of smoke and ash hung heavily over the chaos unfolding below.

Watching this devastation unfold, eyes wide with fear and a strange sense of wonder, was a young boy named Jheronimus van Aken. The flames would eventually subside before reaching his family home, which faced inwards onto the city's market square, but the inferno nevertheless had a profound and lasting effect on the boy who would later sign his paintings with the moniker 'Jheronimus Bosch'.

Born into a family of painters hailing from Aachen (literally van Aken), Hieronymus, to use his Anglicised name, spent his youth immersed in the artistic workshop of his grandfather, who had moved the family to 's-Hertogenbosch at some point in the early 15th century. Hieronymus was unlikely to have chosen any other profession - his father and three uncles all plied their trade as painters in Den Bosch, as did his three siblings - but while the van Aken clan made their living with the brush, none demonstrated quite the same affinity for it as young Hieronymus.

Of the many artists whose work came to collectively define the Renaissance period few, if any, demonstrated the singular vision and wild imagination of Hieronymus Bosch - who at some point saw fit to drop his familial name in favour


HIERONYMO BOSCHIO PICTORI.

DEFINING MOMENT

His marriage

In his late 20s or early 30s, Bosch married local heiress Aleid van de Meervenne (original Dutch spelling), whose family were part of Den Bosch's wealthy elite. The two moved into a larger house in the city's market square, in which Hieronymus established his own workshop. Thanks to Aleid, and his burgeoning reputation as a painter, he began to move in more prestigious social circles.

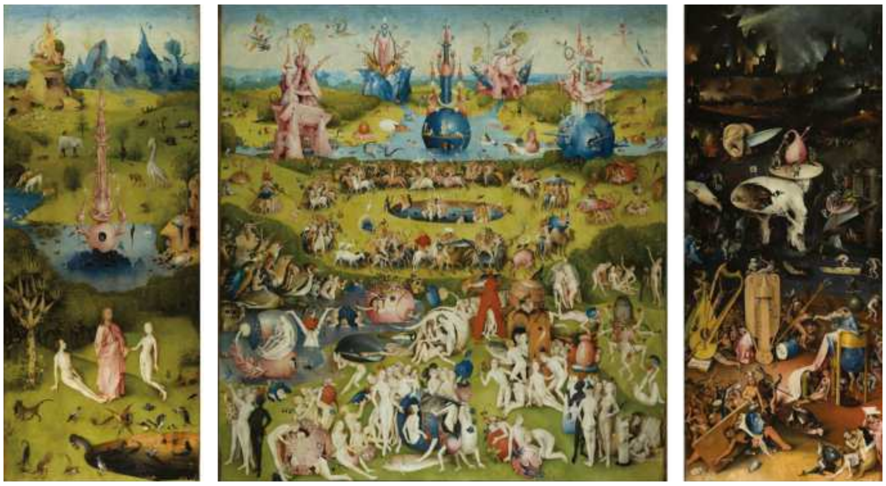
1477-1481

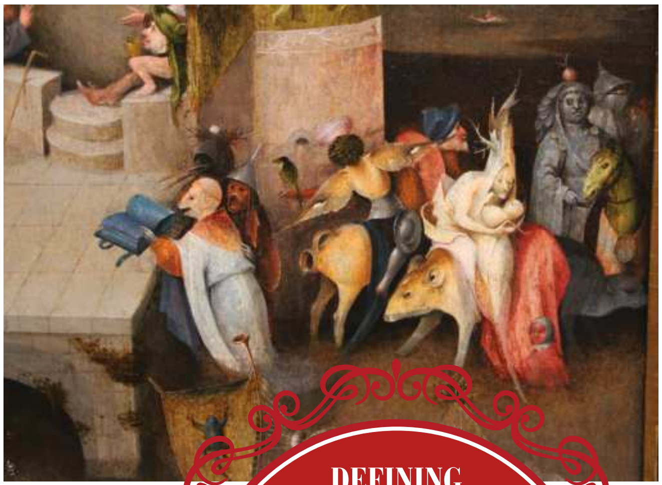
Left: There are no surviving portraits of Bosch made during his lifetime, with the most recognised likenesses produced several decades after his death

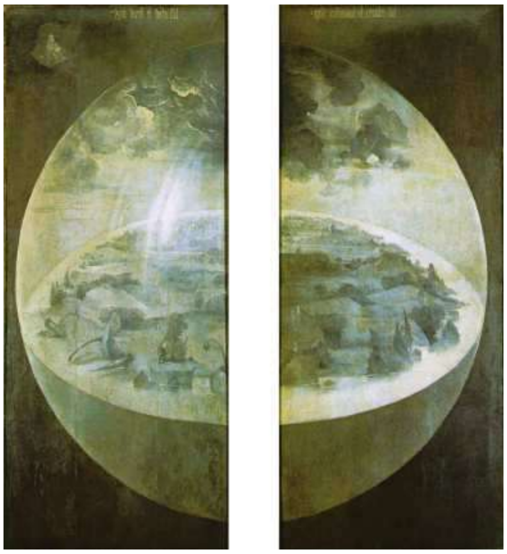
Top right: *The Garden Of Earthly Delights* triptych demonstrates Bosch at his most fantastic - and also at his most sinister

Bottom right: The outer panels of Bosch's triptychs were frequently painted in grisaille, making their vibrant interiors all the more dazzling

Far right: A detail from *The Temptation Of Saint Anthony* gives an example of one of Bosch's strange menageries







of one that tied him to the city where he spent his life. Though his paintings dealt with the predominantly religious subject matter common in Renaissance artwork from Italy and the Low Countries – biblical stories, morality tales, the lives of saints – Bosch's surreal, vivid and often downright disturbing imagery set him apart.

His paintings are frequently characterised by deep, sweeping landscapes that each host an abundance of evocative characters, bizarre tableaus and confounding monsters and instruments. In *The Last Judgment*, one of the fabulous triptychs that have come to be viewed as his signature works, Bosch renders the Garden of Eden and Hell on the left and right panels while dedicating the centre to the chaos of Judgment Day. Each is dense and dazzling when taken as a whole, but the devils lie quite literally in the details: knife-wielding fish-serpents disembowel sinners, web-footed imps fry damned souls in a glowing furnace, and giant walking eggs struck through with arrows stumble through the carnage. Few artists can boast as much invention in their entire collection as Bosch crammed into an inch of one of his masterworks.

None of this is to say that Bosch sacrificed formal painterly skill for outlandish grotesquery. On the contrary, his sketches and paintings display a dazzling mastery of line, colour and light comparable to the most distinguished of his contemporaries. Restored Bosch paintings resonate with vibrant shades of ochre, vermilion and azurite, while the anguish, ecstasy and subtle resignation that mark his subjects' expressions are palpably affecting. It is in large part this combination of technical prowess and uncanny imagery that lends Bosch's work its unnerving, though undoubtedly captivating, aura.

Fittingly for the producer of such an enigmatic body of work, little is known of Bosch's life beyond vague details, intermittent records and, of course, the exquisite artwork that bears his name. Though even here there are doubts – only a few dozen paintings and sketches can be confidently attributed to Bosch himself, while the origins of other works have provided a long-running topic of fervent debate in the art community. His considerable international renown, even during his own lifetime, spawned numerous imitations and homages, which has made discerning authenticity all the more difficult. Some paintings originally attributed to Bosch are now thought to be copies of his originals, while more still were simply inspired by his style.

Of the few unmistakable Bosches that remain, the most iconic is *The Garden Of Earthly Delights*. The Dutchman's magnum opus was painted at some point around the turn of the 16th century, and it's the triptych that perhaps best encapsulates his manic genius. Like *The Last Judgment*, the paintings transition from Eden to Hell, but here the centre panel presents a cacophonous crowd of humans, beasts and towering cornucopias. Nude men and women cavort in this garden of temptations before finding themselves drowned, devoured and tortured in Bosch's bleak afterlife. The silhouettes of burnt-out buildings stand in the distance, relics of the flaming city that Hieronymus witnessed as a child. The message to those who fall into sin is clear.

Today Hieronymus Bosch stands as one of the Renaissance's true visionaries – a pioneer whose unique but elusive take on morality and creation has inspired centuries of varying interpretations and fierce scholarly debate. Moreover, interest in his work has endured and even increased as the years have passed. In 2016, as a way of marking the 500th anniversary of his death, 's-Hertogenbosch staged a year-long festival in honour of the city's most famous son.

At the centre of it all was an unprecedented exhibition from the small Noordbrabants museum. The local institution gathered together the majority of Bosch's paintings and drawings, loaned from world-famous galleries for the first time. If any doubts remained over Hieronymus Bosch's place in the pantheon of great Renaissance figures, the overwhelming response to the collection from critics and the public put paid to them.

For more than half a millennium now, Bosch's twisted hellscapes have shocked and enthralled in equal amount, a testament to his genius ability of tapping into humanity's strangest depths and desires. And, in years to come, these otherworldly scenes of realities just beyond our own will surely remain as fascinating and inscrutable as the mysterious master known to his neighbours simply as 'Joen the Painter'.

> "Today Hieronymus Bosch stands as one of the Renaissance's true visionaries"

DEFINING MOMENT

A sworn brother

The van Aken family had been associated with 's-Hertogenbosch's Brotherhood of Our Lady since they first arrived in the city, but Hieronymus was the first to be taken in by the institution's elite as a 'sworn brother'. Yet another indicator of his increased standing in society, the Brotherhood leant an even higher profile to Bosch and his outstanding artwork.

1488

Written by
Derek Wilson

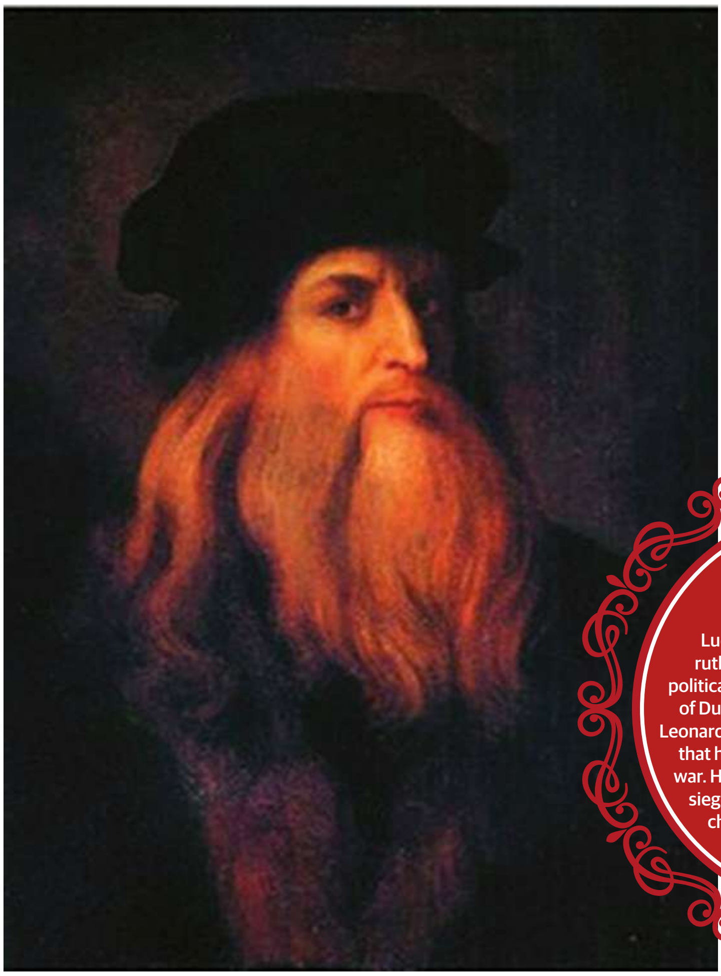
Leonardo da Vinci

1452-1519

Leonardo da Vinci has been claimed by many as the greatest polymath the world has ever seen; his universal curiosity and intellectual brilliance place him in a position in the Renaissance similar to that held by Aristotle in the ancient world

His origins can scarcely have been less auspicious. He was the illegitimate son of a well-to-do notary and a peasant girl. The appellation 'da Vinci' simply indicates the place where Leonardo grew up, then a small walled hilltop town some 42 kilometres from Florence. It was here, in his father's birthplace, that he spent much of his childhood. It did not take long for the boy's remarkable talents to be recognised. Leonardo was fascinated by *everything*. He was seldom without charcoal, pen or brush in his hand, compulsively noting in detail flowers, birds, animals, human faces - whatever at the moment attracted his attention. It is this universal fascination for all aspects of nature that explains one of the apparent paradoxes of Leonardo's life: he left an enormous body of work - paintings, drawings, written analysis, notes and sketches, but much of it was unfinished. His butterfly mind flitted from subject to subject, making incisive observations before moving on, leaving those observations incomplete.

Recognising his son's talent, Piero da Vinci placed him in the workshop of the great Florentine artist, Verrocchio, circa 1467. Verrocchio, patronised by the Medici rulers of Florence and other leading citizens, had a large output of paintings as well as statuary in marble and bronze. Specialisation was a thing of the future and the studio master expected his apprentices to achieve competence in several branches of the arts. Indeed, 'art' was not an activity separate from the pursuit of those areas of



Left: Although his body of completed work is small, Leonardo da Vinci's sketches, notes and analysis continue to be a source of inspiration today

Right: *The Virgin Of The Rocks* was originally meant to contain over 50 figures and architectural details, not the intricate landscape da Vinci and the de Predis brothers eventually supplied

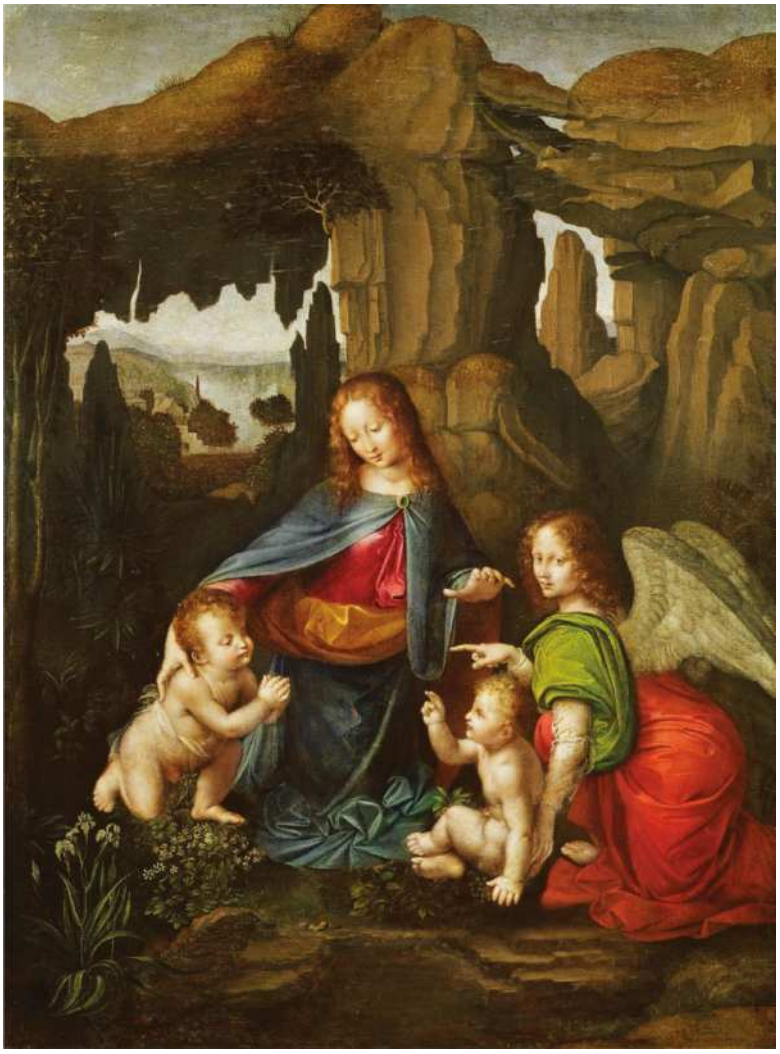
Far Right: The shadowy tones of the *Mona Lisa* is an art technique know as sfumato, or 'to smoke'

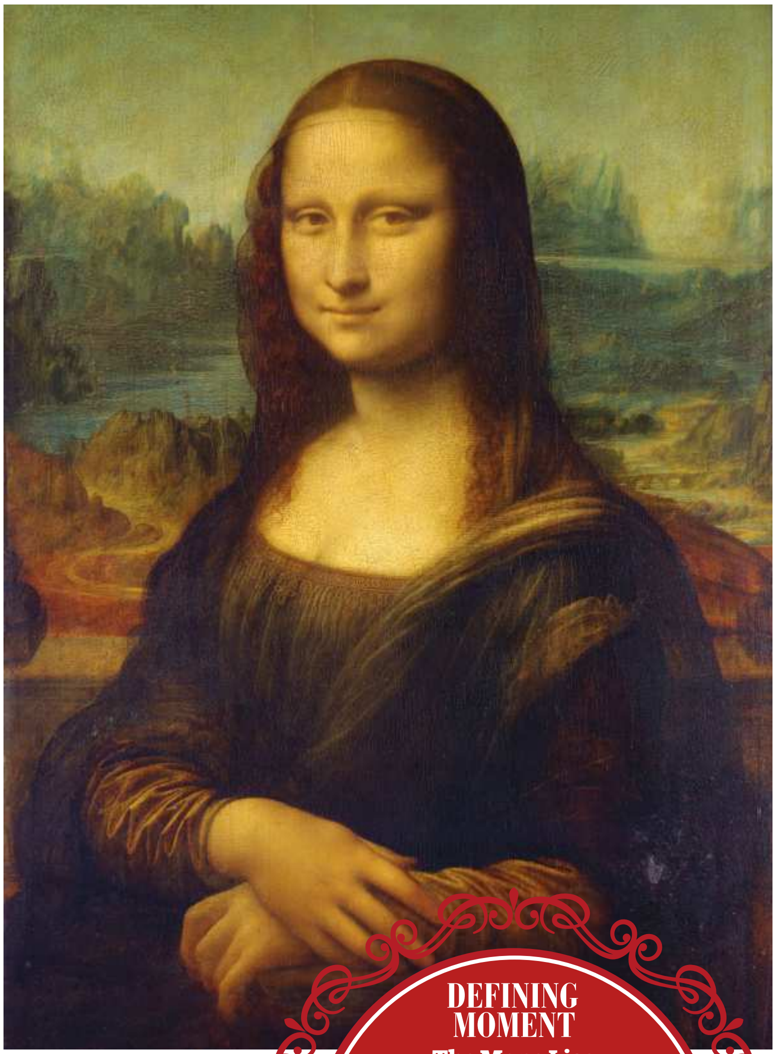
DEFINING MOMENT

The move to Milan

Ludovico Sforza, was cultured and ruthless. He was involved in years of political struggle with his family for control of Duke Gian Galeazzo, so it was wise for Leonardo to state in his letter of introduction that he was a designer of instruments of war. He could show Ludovico drawings of siege engines, tanks, military bridges, chariots armed with scythes and other ingenious weapons.

1483





DEFINING MOMENT

The Mona Lisa

The painting that has become the most famous of all Renaissance artworks was a portrait of Lisa di Antonio Maria Gherardini, wife of a Florentine silk merchant. Begun in 1503, it remained in Leonardo's possession until his death, suggesting he was proud of achieving a naturalism wholly new in portraiture. The relaxed pose, muted colours and subtlety of expression have enthralled millions.

1503

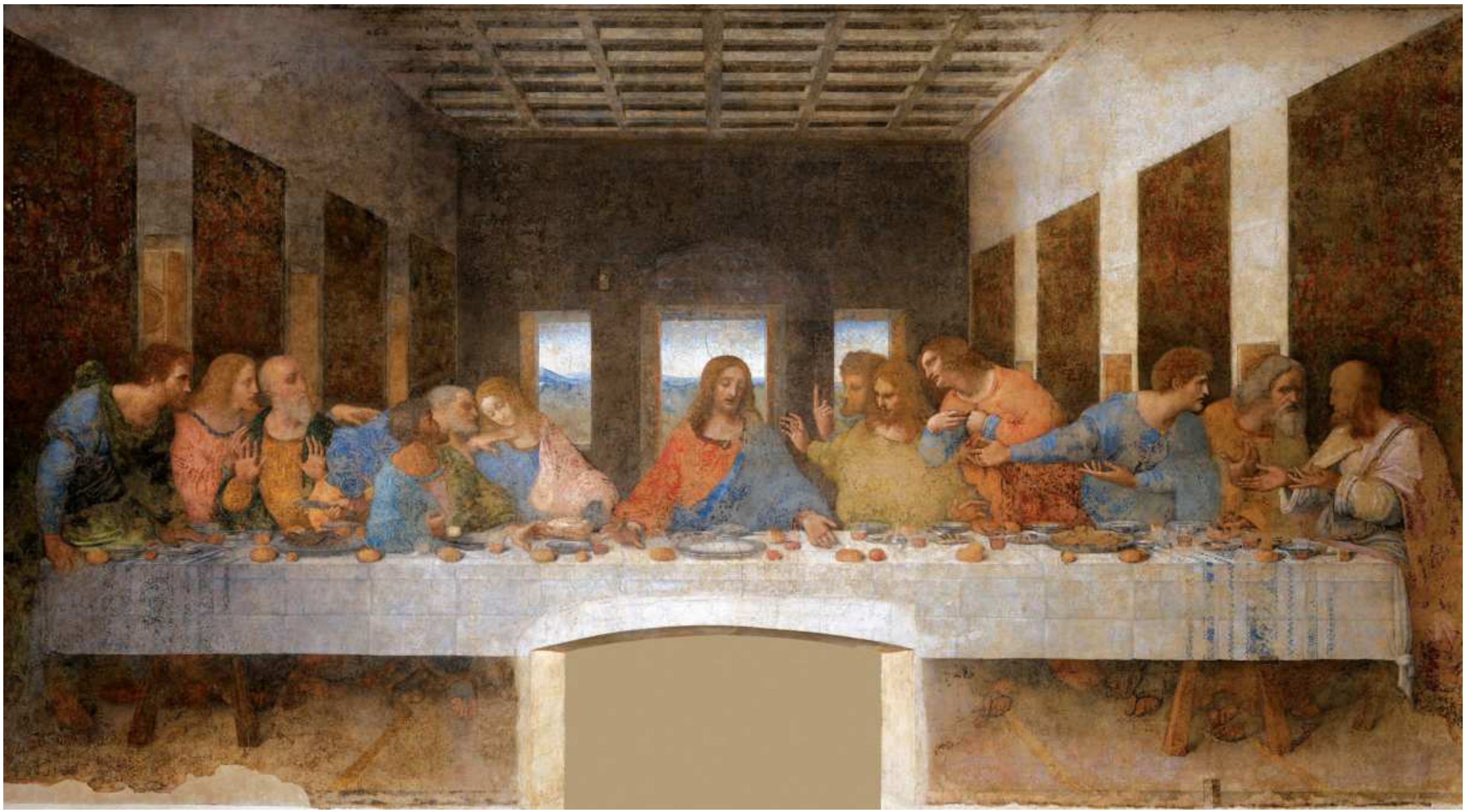
study we now think of as 'science' and 'technology'. Therefore, Leonardo was encouraged to explore, for example, the flight of birds, the movement of water and mathematics. The art historian, Giorgio Vasari, described Leonardo as a "modernist," a painter capable of "the subtlest counterfeiting of all the minutiae of nature exactly as they are." His earliest authenticated painting, *The Annunciation* (c.1472), reveals that, while still under the influence of his master and producing a conventional religious work, he could not resist the temptation to place his angel on a bed of minutely-observed flowers. This loving observation of nature was something Leonardo shared with a few of his contemporary artists in the Netherlands.

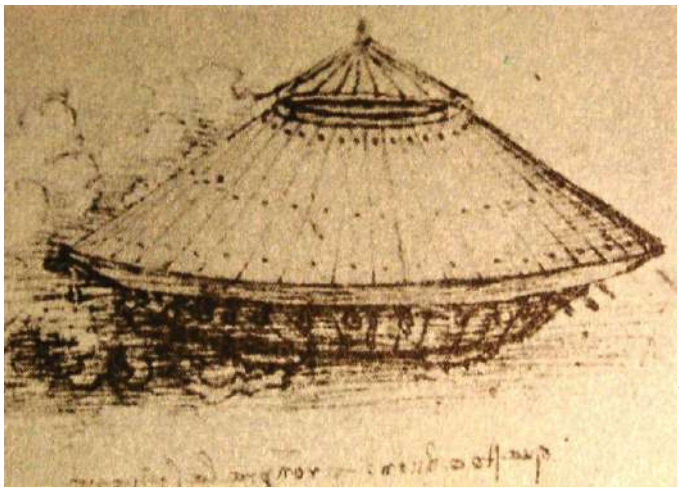
But comparisons fail to do justice to the unique phenomenon that was Leonardo da Vinci. He was, from the start, a philosopher-artist. He read widely and wrote compulsively. He filled notebooks and scraps of paper with sketches and observations, written with his left hand in a backward-sloping script that needs to be read with a mirror. Leonardo made science an art and art a science. He studied anatomy under Antonio del Pollaiolo, the first Florentine to dissect human bodies (an activity frowned upon by the Church). Later in life he returned to this activity with the intention of producing a treatise on anatomy. Someone who saw the work in draft described it as a demonstration; "not only of the members, but also of the muscles, nerves, veins, joints, intestines and of whatever can be reasoned about in the bodies both of men and women in a way that has never yet been done by any other person."

Sadly, this work, if indeed it was ever completed, has not survived. Nature, scientifically observed, measured and recorded, became the runway from which Leonardo's imagination took off. For example, he calculated that there was no reason why man should not fly and he drew the machines that might make this possible.

> "Comparisons fail to do justice to the unique phenomenon that was Leonardo da Vinci. He was… a philosopher-artist"

It may well have been Leonardo's unreliability and unconventionality that made necessary his departure from Florence in 1483. We know that he disappointed at least one of his clients. However, Lorenzo de' Medici, the great art patron, recognised the young man's worth and it seems to have been Il Magnifico who recommended Leonardo to his fellow connoisseur, Ludovico Sforza, the Regent of Milan. Ludovico's ambition was not only to make Milan strong and secure, but also to establish it as a cultured state rivalling Florence and Venice. Eventually he failed in both but, during the years 1483-1499, he employed Leonardo on projects that were many and varied from cavalcade floats for court entertainments to a design for the dome of





Above: *The Last Supper* has not only fuelled the imaginations of artists, it has been used as the basis of religious conspiracy theories

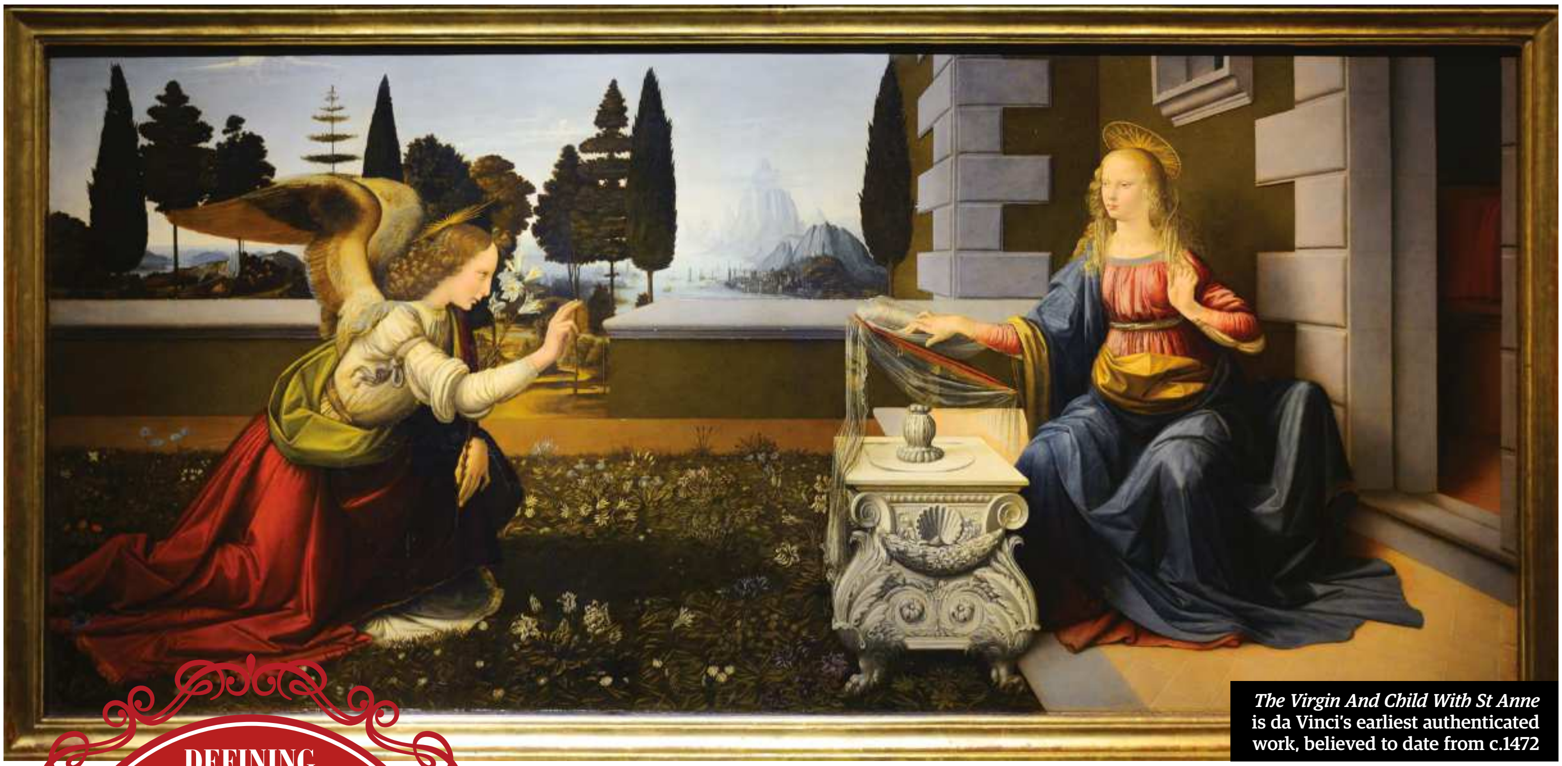
Far Left: Da Vinci's sketch of a fighting vehicle; the conical cover was to be wood reinforced with metal, powered by four men operating two cranks

Left: A modern build of da Vinci's design, which originally had the gears in reverse, thought to be a deliberate mistake

Milan Cathedral and an enormous bronze equine statue of Ludovico's father. The dome drawings and statue were never completed, being overcome not only by Leonardo's erratic working habits but also by the troubled events that overtook the dukedom.

Yet it was in Milan that Leonardo's most famous paintings were produced. Soon after his arrival he was hired together with three assistants to provide part of the décor for the main Franciscan church in Milan, San Francesco Grande. Included in the commission was a painting of the Virgin and Child with angels for the chapel of the Confraternity of the Immaculate Conception. The work was bedevilled by difficult relations with the customers and war in Milan; it would take 25 years for the work to be completed (though there would then be two versions of it). Whether or not the friars thought the result was worth waiting for, there is no denying it is one of the most remarkable religious paintings ever made. The conception was startlingly original and the execution breathtakingly brilliant. It has always been known as *The Virgin Of The Rocks*. Mary is depicted with the infants Jesus and John the Baptist attended by an angel in a grotto beside a stretch of water that might be sea or lake. Delicate foliage and flowers offset the craggy rocks. The biblical symbolism involved is complex and repays calm and concentrated contemplation, as was obviously the intention. The two versions are now housed in the Louvre and in the National Gallery, London, though why a copy was made is not known.

The most remarkable large painting – and one Leonardo did actually finish in reasonable time – was *The Last Supper*. It was commissioned by Ludovico in 1494, the year that he achieved full power as Duke of Milan following the death of his young nephew – in suspicious circumstances. The new duke planned to perpetuate the fame of his family by creating a Sforza mausoleum in the church of the Dominican convent of Santa Maria delle Grazie whose community was charged with praying in perpetuity for the souls of the dynasty. Leonardo's contribution was to be a depiction of the last supper Jesus shared with his closest disciples



The Virgin And Child With St Anne **is da Vinci's earliest authenticated work, believed to date from c.1472**

DEFINING MOMENT

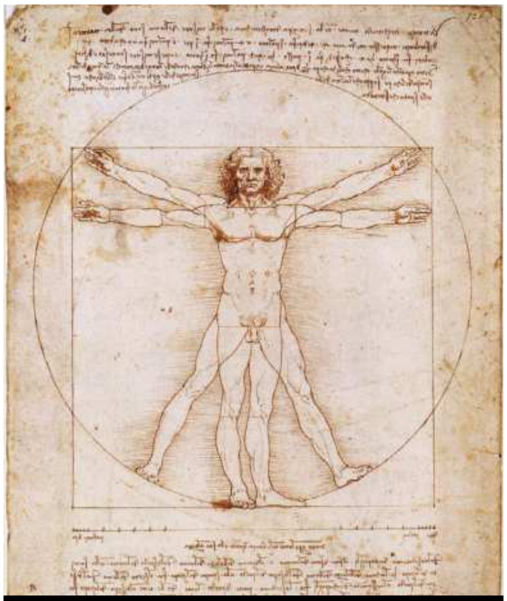
The troubled years

The Italian Wars forced Leonardo to flee from Milan and find work. In 1502 he joined Cesare Borgia, helping him in his campaigns in the Papal State. The years 1503-1513 were spent between Florence and Milan. Then he joined the team of leading artists employed by Pope Leo X to beautify the Vatican. In 1516, he was offered dignified retirement by Francis I of France at Amboise, where he died.

1499-1516

on the eve of his crucifixion. The innovative approach the artist brought to realising this commission ensured that it was both a triumph and a disaster.

It was a triumph because Leonardo created not just a tableau of a historical event, but a group of psychological studies. He entered into the simple biblical narrative in order to capture the dramatic impact of one single moment. Jesus and the 12 disciples are enjoying an intimate meal until the Master declares, "one of you will betray me." The disciples react in various ways to this shocking prophecy and Leonardo provides what are, in effect, 12 psychological profiles to display their responses. There can be little doubt that the artist intended to draw the members of the convent (and all subsequent beholders) into the story, no longer audience members, but participants, urged to ask themselves, 'Is it I?' Yet there is more to Leonardo's religious theatre. Right in the centre of the composition, seeming almost detached from the impact of his words, Christ indicates the bread that represented his body in the liturgy of the mass. *The Last Supper* represented a gigantic step forward in religious iconography, achieving in paint something that would not otherwise be possible before the development of stage and film dramas.



The Vitruvian Man **(c.1490) is based on Vitruvius's theories of ideal human proportions**

The Last Supper was a disaster because Leonardo could not stop himself experimenting with painting technique. The method he employed on the refectory wall ensured that this masterpiece had begun to deteriorate within 29 years. We shall never see *The Last Supper* in its full glory.

The very year that Leonardo began work on the painting, his secure life in Milan came under threat. The pope and the King of Naples formed an alliance against Duke Ludovico. He responded by asking Charles VIII of France to come to his aid and encouraging him to lead his army through Milanese territory in order to attack Naples. Thus began the Italian Wars that would rage intermittently for over 60 years. In order to strengthen his position in Italy, Charles decided to annexe Milan. In 1498, Ludovico was defeated in war by his former ally. Two years later he was captured and imprisoned in France, where he died in 1508.

The unsettled life Leonardo lived after his hurried departure from Milan in 1499 was a further distraction for a man easily distracted, and he completed few paintings in his last years. But his importance in Renaissance art, thought and life does not depend on the few completed paintings that have survived. His influence was profound. Fellow artists revered him for his constant, daring innovation. The late work, *Madonna And St Anne*, with its revolutionary interweaving of figures had a profound influence on Michelangelo, Raphael and others. But it is in the considerable collection of drawings, which Leonardo regarded as more important, that bring us closer to the thinking of a great Renaissance genius.

> "He entered into the simple biblical narrative in order to capture the dramatic impact of one single moment"

Niccolò Machiavelli, as painted by Sandi de Tito

Niccolò Machiavelli

1469-1527

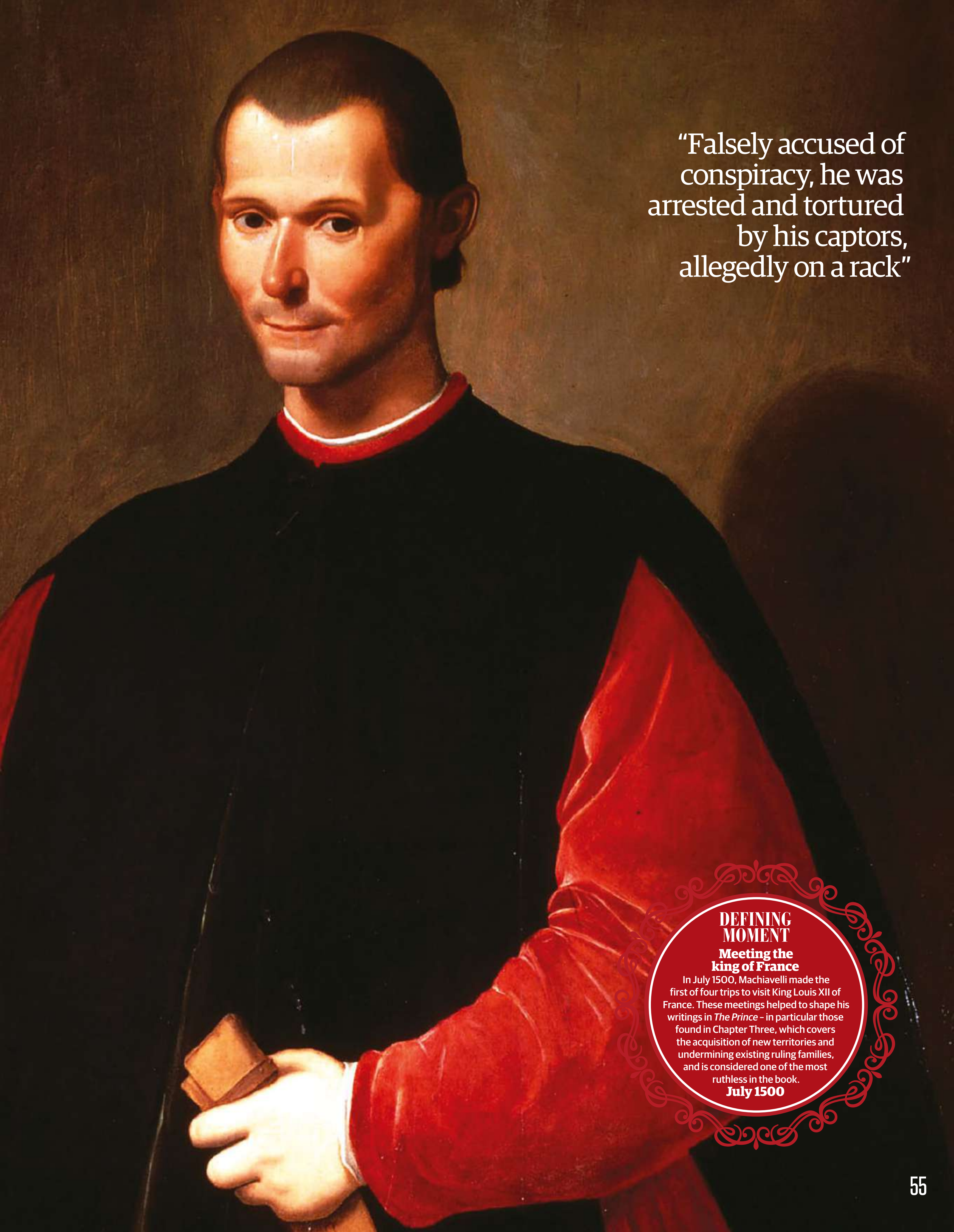
Considered a master of manipulation, was Machiavelli a conniving political exile or a misunderstood, disillusioned satirist?

Hailed as the father of modern politics, Niccolò Machiavelli has long been synonymous with everything bad about the political sphere. His name, turned adjective as 'Machiavellian', conjures up images of a cunning, sly and manipulative figure, hell-bent on achieving their own goals regardless of the means of getting there. But was the man behind the legend really as cruel as his legacy makes out?

Interestingly, Machiavelli's reputation varies from country to country. Tarred as a schemer, he has gone down in English-speaking history as the first of the slimy, slippery politicians – yet in his home nation of Italy, any notion of this historical bias is shed and the man is seen for what he really was: an innovator whose views were far ahead of his time – by 500 years, in fact. To this day, Machiavelli's philosophical insights into the world of politics have shaped modern ruling, and his observations are just as relevant as they were in the 15th century.

Born in 1469, little is known of Machiavelli's childhood except that he grew up on his father's estate on the outskirts of Florence, where he received an education fit for an up-and-coming Florentine diplomat. A centre of philosophical thinking, Florence provided Machiavelli with an exceptional humanist education. But this hub of culture was in a perpetual state of tumult. Florence had served as the origin of the Italian Renaissance less than a century before, and with the rise of the Medicis in the early 1400s, the city prospered and grew. Yet as Florence thrived under Cosimo de' Medici, the state faced constant strife with its neighbouring districts, while on the horizon, foreign invasion looked imminent. Enduring peace was a distant dream. By 1494, the Medici had been expelled from Florence, and it was in this harsh, unstable environment that Machiavelli thrived.

In 1498, the intellectual attended sermons and speeches by Girolamo Savonarola, a preacher whose views went against the grain. Savonarola preached against the corruption of the pope, among other topics, and was hanged later that year, accused of being a heretic. Just a few days after Savonarola's execution, Machiavelli found himself in charge of Florence's foreign affairs as the head of the second



> “Falsely accused of conspiracy, he was arrested and tortured by his captors, allegedly on a rack”

DEFINING MOMENT

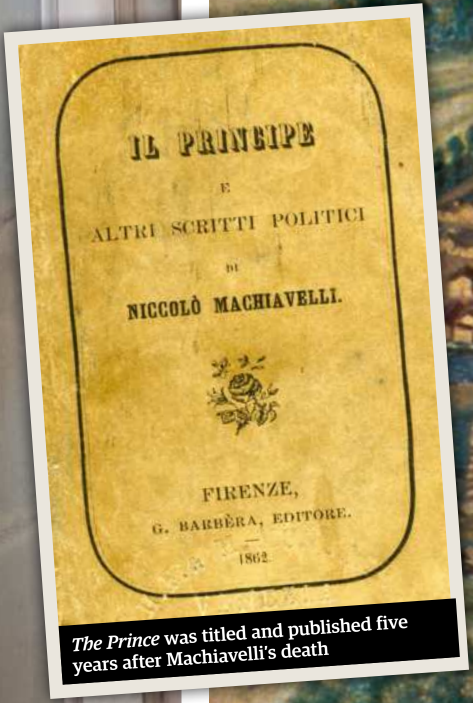
Meeting the king of France

In July 1500, Machiavelli made the first of four trips to visit King Louis XII of France. These meetings helped to shape his writings in *The Prince* – in particular those found in Chapter Three, which covers the acquisition of new territories and undermining existing ruling families, and is considered one of the most ruthless in the book.

July 1500

NICCOLÒ MACCHIAVELLI

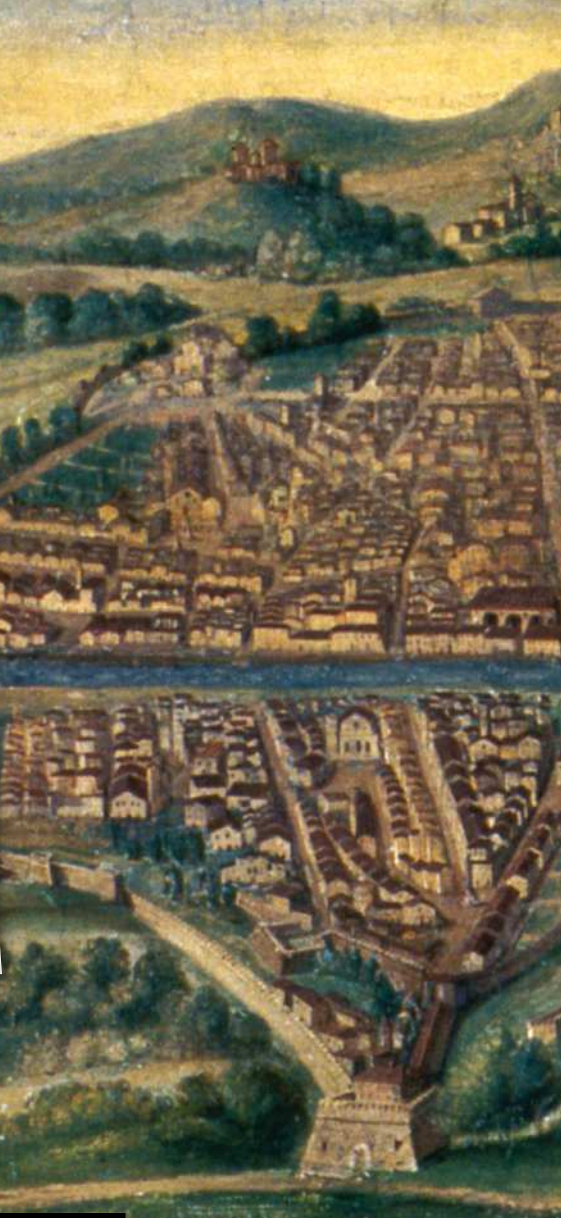
Revered in Italy, a statue of Machiavelli stands outside the Uffizi Gallery in Florence



IL PRINCIPE
E
ALTRI SCRITTI POLITICI
DI
NICCOLÒ MACHIAVELLI.

FIRENZE,
G. BARBÈRA, EDITORE.
1862.

The Prince was titled and published five years after Machiavelli's death



15th-century Florence, where Machiavelli thrived during the Medicis' exile

chancery. How exactly this young man entered such a high position in government without known prior experience confounds historians to this day, but his tenure lasted until 1512, when the Medicis returned to power.

During the eight years that the Medici family was exiled, Machiavelli's political career went from strength to strength. He won the favour of the chief magistrate (gonfalonier), Piero Soderini, whom he convinced to found a militia in 1505, which helped reduced the city's reliance on mercenaries. Created by Soderini, the militia was run by Machiavelli. On top of this, Machiavelli made visits to renowned figures, including Cesare Borgia (whose political prowess influenced much of Machiavelli's early writing, and later inspired part of his most notorious work, *The Prince*), Charles VIII of France and several reigning popes of their time.

DEFINING MOMENT

Arrest and torture

After the Medicis' return to the city, Machiavelli was accused of conspiring against them and incarcerated. This wrongful accusation and subsequent torture arguably influenced the creation of Machiavelli's most renowned work, *The Prince*. Some claim that the writings were a reaction to the trauma he'd been subjected to at the hands of the Medici family after their return to power.

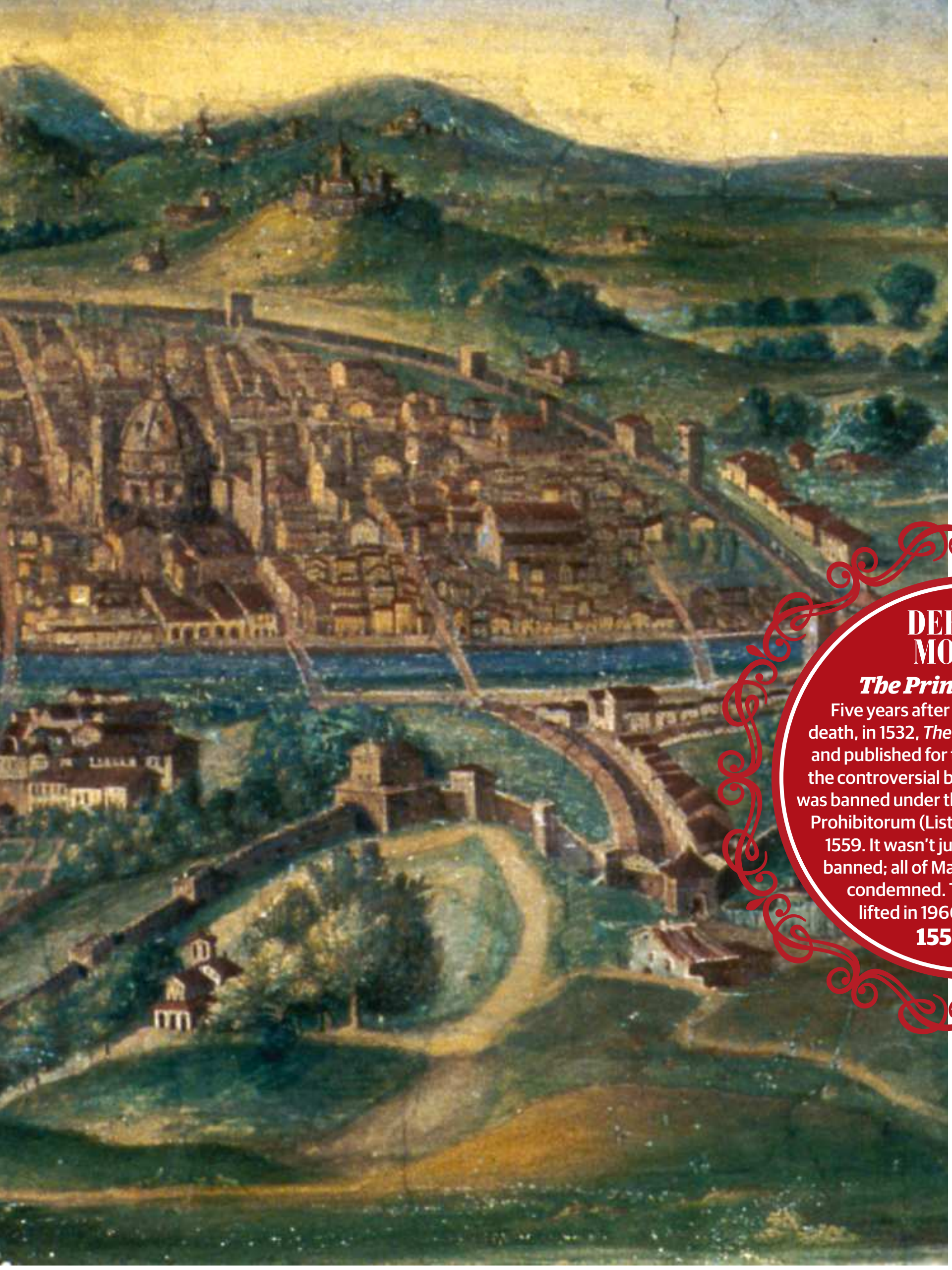
1512

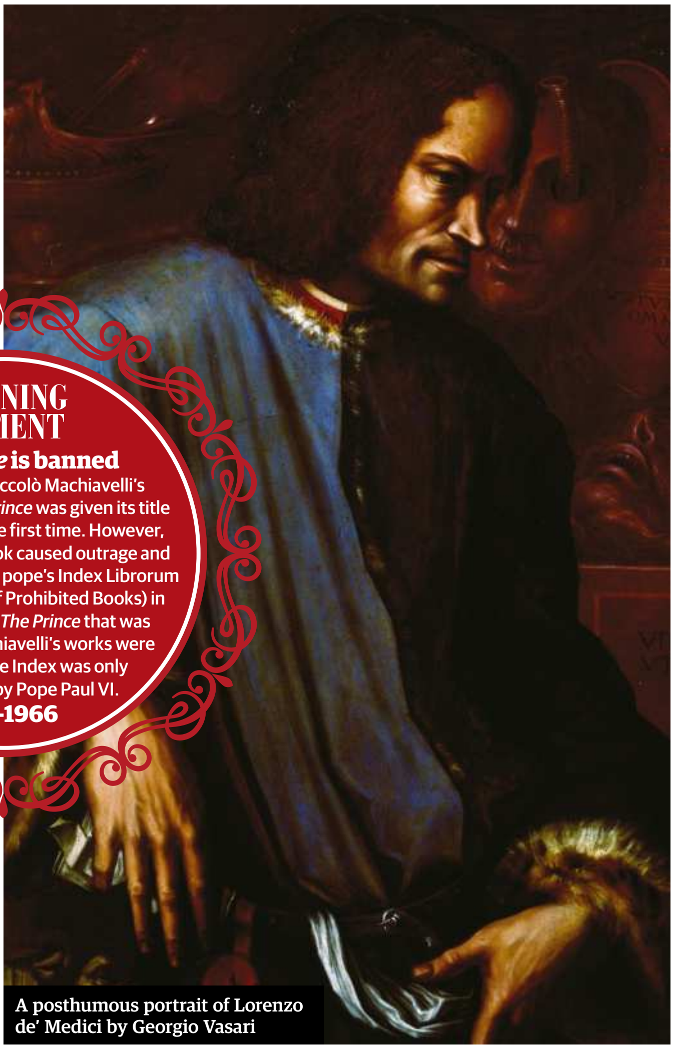
It was in 1503 that Machiavelli began to write seriously. His poem – the first *Decennali*, which was part one of a two-part poetry epic on the history of Florence – was finished a year later. Yet behind the scenes of Machiavelli's high-flying diplomatic career there were cunning forces at work. Pope Julius II had enlisted Spain in his war against France under the Holy League and, in early September, he commanded his general, Ramón de Cardona, to seize Florence. With that achievement, the House of Medici was restored.

This spelled catastrophe for Machiavelli. Falsely accused of conspiracy, he was arrested and tortured by his captors, allegedly on a rack. He fiercely denied any involvement in the plots against the Medici family, but despite his protestations of innocence Machiavelli was kept imprisoned. Yet fortune was on the diplomat's side, as Pope Julius II died in February the following year. Under the new pope, Leo X – who incidentally hailed from the line of ruling Medicis – celebrations were organised and an amnesty was agreed. Machiavelli was free. The cost, however, was dear – he was banned from the city of Florence and ordered to retire to his family estate on the outskirts of the city. It was during this exile that Machiavelli began to pen his most famous works, including the controversial comment on politics that still rings true to this day, *The Prince*.

Confined to his estate outside of Florence, Machiavelli pondered how to weave his way back in to the political landscape of the city and came to a conclusion: he would write a guide to politics as he had experienced it during his diplomatic career. In 1513, he completed *The Prince* and dedicated it to Lorenzo di Piero de' Medici, grandson of Lorenzo the Magnificent, the newly proclaimed ruler of Florence and head of the Medici family. To this day, the exact purpose of the dedication is debated – was it to flatter the ruler in an attempt to have himself reinstated, or was it an intellectual satire, mocking the politics of the city from which he had been exiled?

Either way, the book was enough to cause scandal when it was published in 1532, five years after Machiavelli's death. In *The Prince*, Machiavelli split his work in to two parts – the first was devoted to methods of gaining power, while the second (and





A posthumous portrait of Lorenzo de' Medici by Georgio Vasari

DEFINING MOMENT

The Prince is banned

Five years after Niccolò Machiavelli's death, in 1532, *The Prince* was given its title and published for the first time. However, the controversial book caused outrage and was banned under the pope's Index Librorum Prohibitorum (List of Prohibited Books) in 1559. It wasn't just *The Prince* that was banned; all of Machiavelli's works were condemned. The Index was only lifted in 1966 by Pope Paul VI.

1559-1966

> "While in life he failed as a politician, Machiavelli's writings have inspired generations of leaders – both good and bad"

arguably most important) section offered advice on how to hold on to power when you had it. It was this book and its controversial statements for which Machiavelli is best remembered – and not fondly. Aside from providing a description of the qualities that any ruler should have, *The Prince* also posed a very serious moral question: was it better to keep your moral integrity intact and lose power, or to compromise, using your cunning and wit, regardless of the method, in order to achieve your goals?

Two chapters in particular fanned the flames of controversy. In Chapter 18, entitled 'Concerning The Way In Which Princes Keep Faith', Machiavelli wrote that while it is admirable to attempt to be a virtuous ruler, sometimes it is necessary to employ less-than-moral means to succeed; that for the sake of ultimate good, sometimes you need to be bad. Here, Machiavelli claimed, "A prince being thus obliged to know well how to act as a beast must imitate the fox and the lion, for the lion cannot protect himself from traps, and the fox cannot defend himself from wolves. One must therefore be a fox to recognise traps, and a lion to frighten wolves."

Chapter Seven, titled 'Concerning New Principalities Which Are Acquired Either By The Arms Of Others Or By Good Fortune', also appalled readers. Machiavelli seemed to advocate murder as he recounted the story of the Duke of Valentinois, Cesare Borgia, conquering Cesena in Romagna. Having employed Remirro de Orco as his deputy, Borgia commanded him to pacify and subdue the town with force, and he used brutal tactics, such as beheadings and castrations, to bring peace to the region. The town was tamed but the residents despised Orco, so Borgia had his deputy cut in half and displayed in the town piazza in order to curry favour. With the brutality over, Borgia reduced taxation and invested in the town through the creation of a theatre and carnival. This was served up as the perfect example of where the ends (ultimate peace, protection and prosperity for his people) justified the means (mass murder and mutilation).

After completing *The Prince*, Machiavelli moved on to other writings, including *Discourses On Livy*, *Art Of War* and *The Mandrake Root*, among others. If *The Prince* really was a cunning ploy to impress, then it never fulfilled its purpose. In all likeliness, Lorenzo di Piero de' Medici never read Machiavelli's masterpiece, and until his death in 1527 at the age of 58, the exiled politician remained confined to his estate, never to return to the political sphere. Yet while in life he failed as a politician, Machiavelli's writings have inspired generations of leaders – both good and bad. Among the tyrants and dictators of contemporary history who studied *The Prince* – including Stalin and Mussolini – the work has inspired some of modern culture's most iconic creators, including George RR Martin, the author of the books that inspired TV fantasy series *Game Of Thrones*.

To this day, Machiavelli's writings remain relevant – perhaps more so in today's political climate than ever before. The rules of power haven't changed in over 500 years of politics. What has changed are the faces that mask the true nature of being a politician – those shrewd, Machiavellian schemers that embody the truths of Machiavelli's writing – but perhaps that's not such a bad thing.

© Alamy, TopFoto

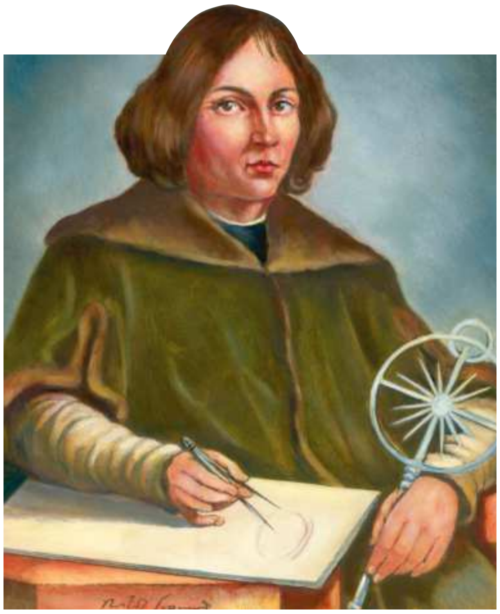
Nicolaus Copernicus

1473-1543

How the observations of a 16th-century Polish Catholic monk set the Scientific Revolution into motion and realigned Earth's place in the universe…

Until Copernicus, the most widely accepted theory of the universe was that the Earth was at the centre, and the Sun, Moon and planets all revolved around it. This was an idea that had been advocated by Aristotle millennia before, then by Ptolemy and was fiercely backed by religious leaders. Any who dared to challenge this dogma were accused of heresy - a crime punishable by death.

However, following the Ottoman conquest of Constantinople - a bastion of Greek culture - many of the city's scholars were forced to flee west. With them they brought a wealth of ancient knowledge and classical methods of observation and questioning as a way to solve the great mysteries of the universe.



At the same time, growing scepticism of the Catholic Church and England's break from Rome meant that reason was beginning to take the place of religion in academia, a realm that had before been largely governed by Christian belief. As a result, Renaissance astronomers began to challenge Aristotelian physics.

One of these stargazers was Mikołaj Kopernik, or as he has come to be known, Nicolaus Copernicus. He was born in 1473 in Torun, Poland. When he was just ten years old, his father died and his uncle, a bishop, took the boy under his wing. He supported Copernicus throughout his studies at the University of Krakow, which he began in 1491, in the heyday of the Krakow astronomical-mathematical school. It was here that Copernicus laid down a strong foundation for his later mathematical achievements.

In 1496, he moved to Bologna, Italy, to study canon law, and rented a room in the house of prominent professor and astronomer Domenico

A LIFE'S WORK

We pick out some of the milestones over this astronomer's lifetime

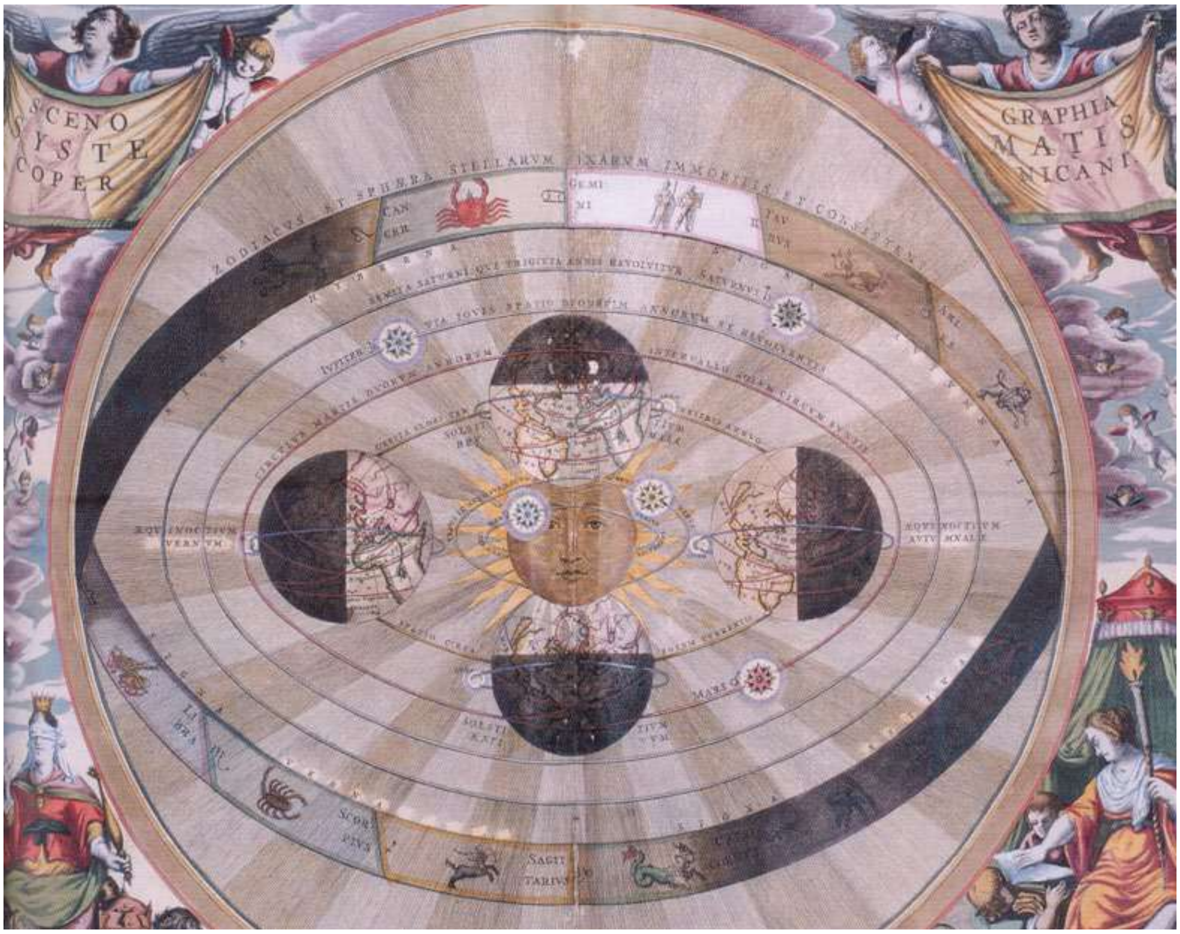
1473
Copernicus is born to his namesake father Nicolaus, an affluent copper merchant, and mother Barbara in Torun.

1491
Copernicus studies painting and mathematics at the University of Krakow at 18 years of age.

1496
After graduating he moves to Italy to study canon law, but is drawn towards astronomy.

1503
Copernicus returns to Poland to live with his uncle, acting as his secretary and physician.

1512
After his uncle's death, Copernicus moves to Frombork (pictured right) in northern Poland to work as a church canon.



Maria de Novara. He became his disciple and assistant and for the first time was met with a mind that dared to challenge the existing theories of the cosmos.

On completing his studies, Copernicus returned to Poland to live with his uncle, acting as his secretary and physician at the same time. During this time he began work on his now famed heliocentric theory. In 1512, his uncle died and Copernicus moved to Frombork, where he took up a position as a canon - an administrative appointment in the Church.

Here he had more time to devote to his astronomical studies, and built himself a small observatory from which he could plot the movement of the stars. Around 1514, he outlined his theories in a short, anonymous manuscript referred to only as *Commentariolus*, in which he summarised his heliocentric model of the Solar System, where the planets orbited the Sun. While he only distributed the manuscript among a few friends, a buzz began to build around Copernicus and his unconventional theories, but they also sparked controversy in the Catholic Church.

While the threat of persecution did not deter Copernicus from developing his theories, he was reluctant to publish them and kept his findings secret for decades. However, in 1540 his pupil Georg Joachim Rheticus convinced him to publish his book *De Revolutionibus Orbium Coelestium* (*On The Revolutions Of The Heavenly Spheres*). In 1543, as Copernicus lay on his deathbed, the first-ever printed copy was placed into his hands. The Scientific Revolution had begun in earnest.

Above: A 17th century engraving of Copernican heliocentrism

Top 5 facts: Nicolaus Copernicus

1 Multitalented man

Copernicus's skills were not limited to astronomy. He was also a physician, scholar, economist, translator, mathematician, artist and diplomat, among other things.

2 It's in the chemistry

The chemical element Copernicium is named after Copernicus. Its discoverers wanted to name the element after a scientist who did not receive enough recognition for their work in their own lifetime.

3 Bad money drives out good money

In 1526, Copernicus developed a monetary theory, now called Gresham's Law, which was used to stabilise the currency in Poland and is still a principal concept in economics today.

4 The centre of everything?

Contrary to popular belief, Copernicus didn't actually believe that the planets of the Solar System orbited the Sun itself, but around a centre that was near to it.

5 Doctor Copernicus

Though he had a brief stint studying medicine, he never gained a medical degree, yet he acted as physician to his uncle and then his uncle's successor for many years.

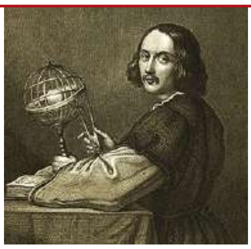
> "A buzz began to build around Copernicus and his unconventional theories"

1514
Copernicus produces a short manuscript known as the *Commentariolus*, where he outlines his heliocentric theories.

NICOLAI CO
PERNICI TORINENSIS
DE REVOLUTIONIBUS ORBIUM

1532
Copernicus completes *De Revolutionibus Orbium Coelestium*, but is reluctant to publish it for fear of religious persecution.

1539
The astronomer takes on his first and only pupil, Rheticus (right), who persuades him to publish his work.



1543
The first copy of his book is published, but Copernicus dies shortly after from a stroke, aged 70.

© Corbis

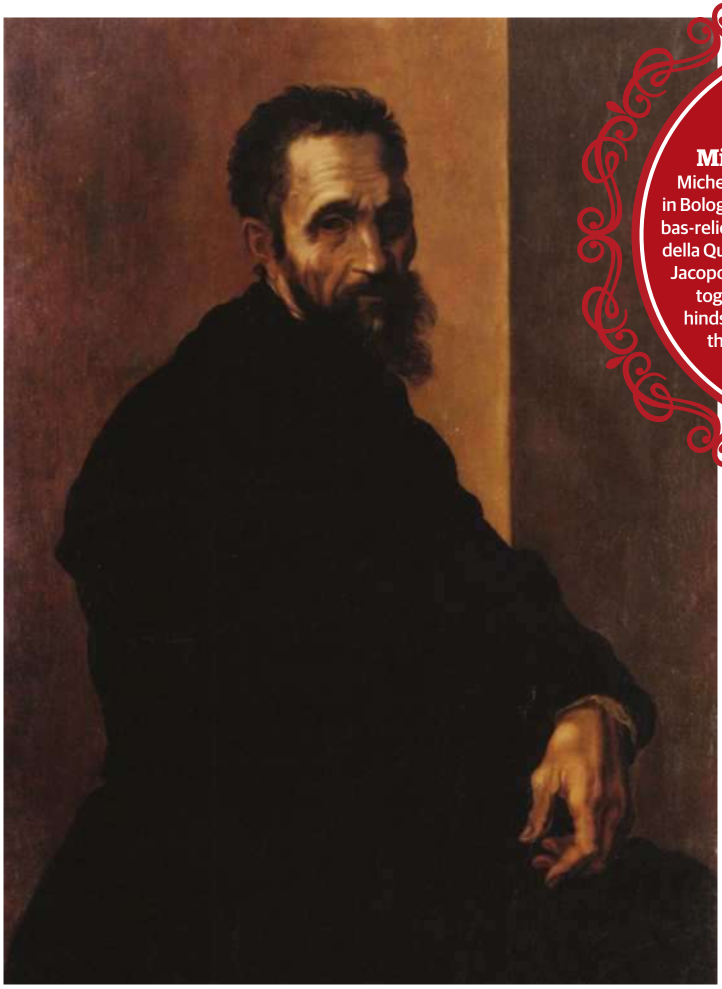
Michelangelo Buonarroti

Written by
Derek Wilson

1475-1564

Michelangelo Buonarroti was to become the dominant personality of the High Renaissance in Florence (where he surpassed even Leonardo da Vinci) and Rome

His future was laid out for him almost from birth, not because he came from a family of artists, but because he grew up in a village of stonecutters in the hills near Florence. From a young age he was fascinated by the qualities of marble - the structure, the grain, the solidity that still yielded to the mason's tools. He could 'see' the image embedded in the rock and thought of sculpture not as making something out of the natural material, but setting free the entity placed there by the Creator. So evident was Michelangelo's talent that his reluctant father allowed him to be apprenticed to Domenico Ghirlandaio, the most successful and prosperous artist in Florence, who presided over several trainees in his bustling workshop. Michelangelo spent only a year in this creative environment before moving on to something still more prestigious. Lorenzo de' Medici, the 'Magnificent', maintained his own private school for fostering promising young artists. Thus, before he was out of his teens, Michelangelo was moving in the most exalted cultural and political circles in Florence, where the latest philosophical theories were being discussed. Yet he was always something of a loner. The obsessive vision of perfection that kept him at work all the daylight hours and filled his mind much of the night, was a form of self-exile. He had a reputation for being arrogant, 'difficult' and even aggressive. On one occasion he got into a fight with fellow artist, Pietro Torrigiano, and during the altercation sustained a broken nose which never



DEFINING MOMENT

Michelangelo in Bologna

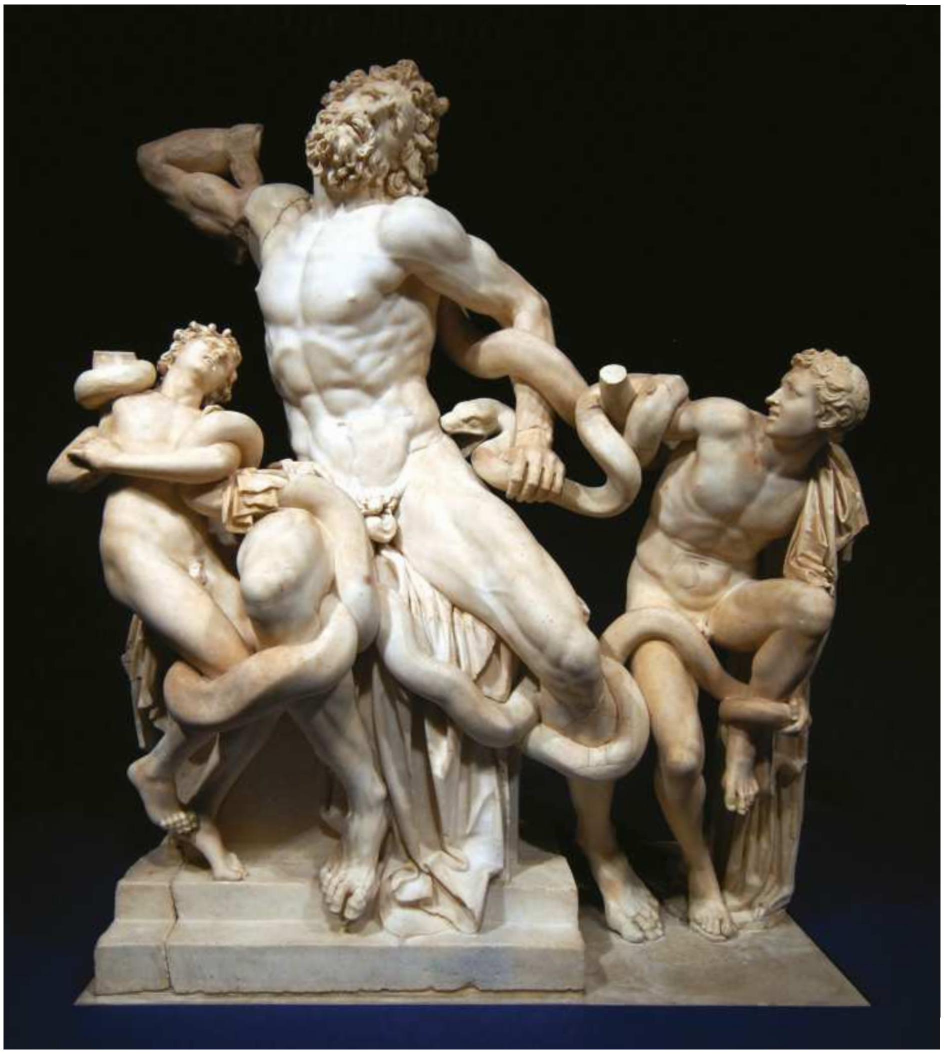
Michelangelo spent the winter of 1494-5 in Bologna. There he encountered a series of bas-reliefs carved 70 years earlier by Jacopo della Quercia for the church of San Petronio. Jacopo had shown nude figures struggling together in superhuman conflict. In hindsight we can connect these across the time gap with Michelangelo's *Last Judgement* and *Battle of Cascina* (now lost).

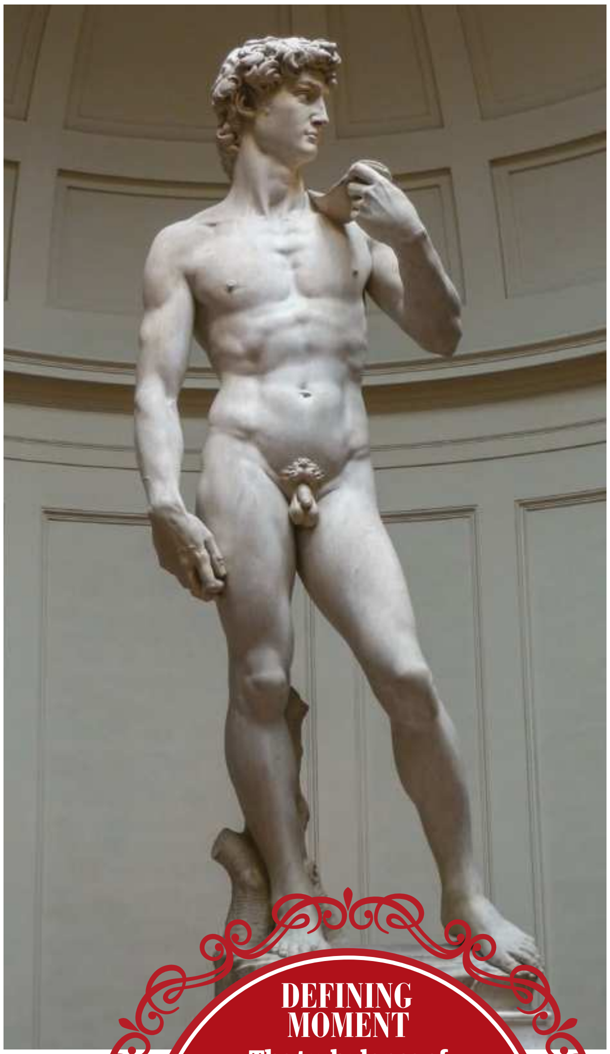
1494

Left: Jacopo del Conte, *Portrait Of Michelangelo*, c.1540

Right: *Laocoön And His Sons*, a classical statue supposedly found by Michelangelo and friends

Far right: Michelangelo's infamous *David* statue





DEFINING MOMENT

The turbulence of Medician Florence

Michelangelo's career was played out against the fall and rise of the Medici family. The populace was stirred by the preaching of Girolamo Savonarola, who denounced the luxury of the former regime and prophesied destruction. Michelangelo believed Savonarola, whose warnings seemed to be realised when Charles VIII of France invaded north Italy.

1478-1494

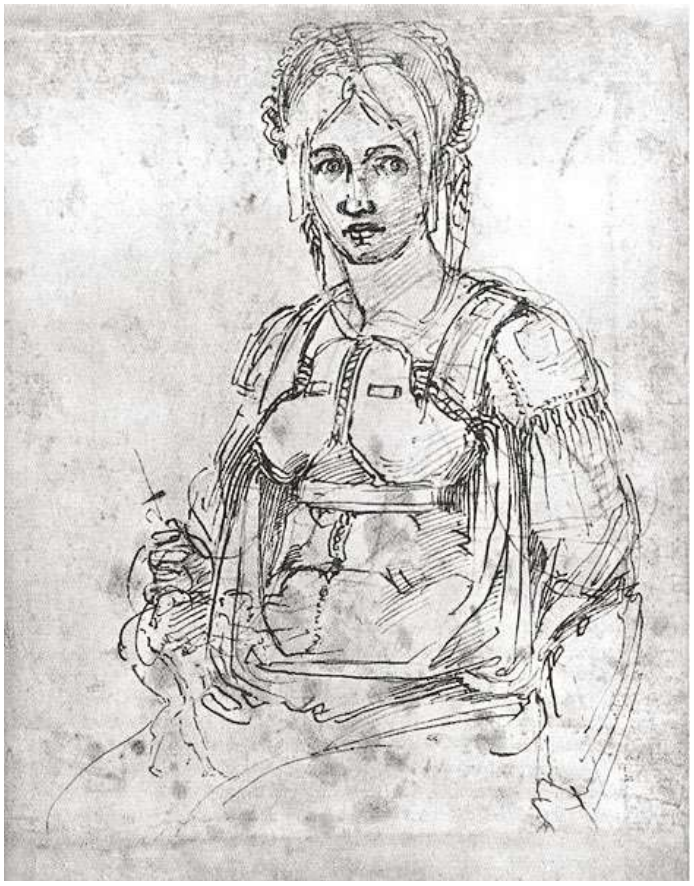
reset properly. Soon afterwards Torrigiano ended up at the court of Henry VII in England.

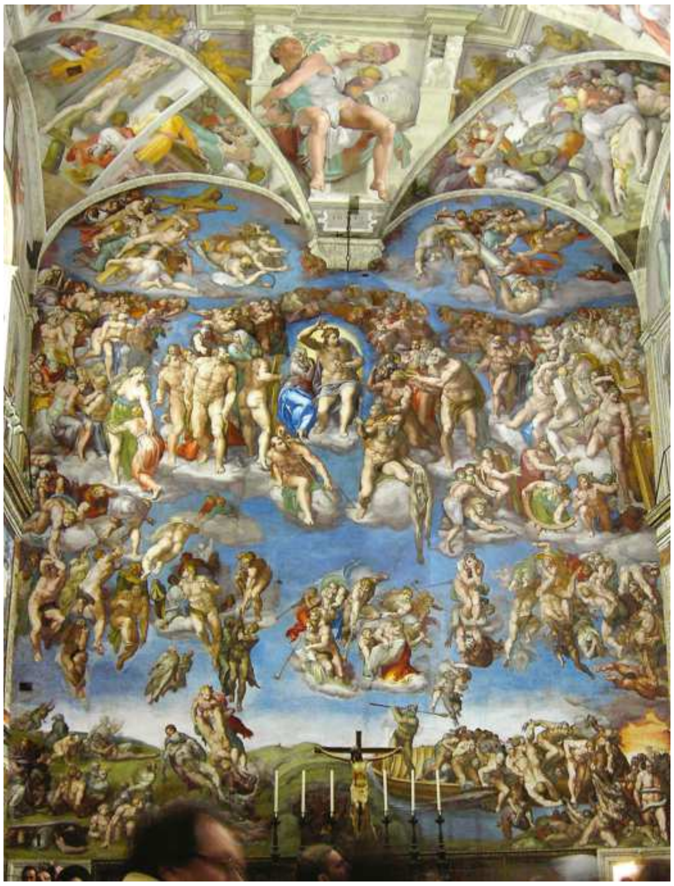
Michelangelo was deeply religious and this shows in one of his early works. The *Pietà* was commissioned by a cardinal in 1498 as part of the furnishing of St Peter's, Rome. It was a truly astonishing accomplishment for a young man still in his early twenties. His close studies of the nude had given him a detailed understanding of the human form. But the image of Mary with her dead son was more than just a pair of accurately observed figures. Michelangelo often said that it was his intention to lift the 'mortal veil' with which God had clothed his creatures, in order to reveal the soul within. In the moving *Pietà*, he certainly achieved that.

> "His presentation of the human form was not a rebellion against prudery… it was a part of his personal piety"

Michelangelo stands out in the history of art for many reasons but the most important is his 'rediscovery' of the human form. The bodies of men and women (not forgetting children, who were often the models for angels and putti) had, of course, always been represented in sculpture and painting, both clothed and unclothed, but not until Michelangelo appeared do we find an artist who delighted in the human form and treated it with reverence. This was why, although he was a great painter, he preferred the 3D impact of sculpture. He stated his preference quite clearly: 'The nearer painting approaches sculpture the better it is… sculpture is worse the nearer it approaches painting." Earlier artists had never achieved full understanding of anatomy, partly because of a certain reserve in displaying nakedness. In religious works the figures of Christ, saints, martyrs and biblical figures were shown with sexual organs discreetly covered. Michelangelo was contemptuous of this reserve. He drew inspiration from the pagan art of ancient Greece and Rome. For this he was censured by some members of the religious establishment. But his bold presentation of the human form was not a rebellion against prudery; his attitude towards bodies was a part of his personal piety. Men and women had been created in the image of God. Therefore, there was something glorious, even holy, about their appearance. Indeed, a sense of shame about the naked body was a result of the Fall: Adam and Eve had only thought to cover their nakedness after they had sinned by eating the forbidden fruit.

Michelangelo avidly studied bodies - surviving classical statues as well as live models. He was also assisted by being able to observe anatomical dissection. Although this, too, was frowned on in some quarters, physicians and artists were



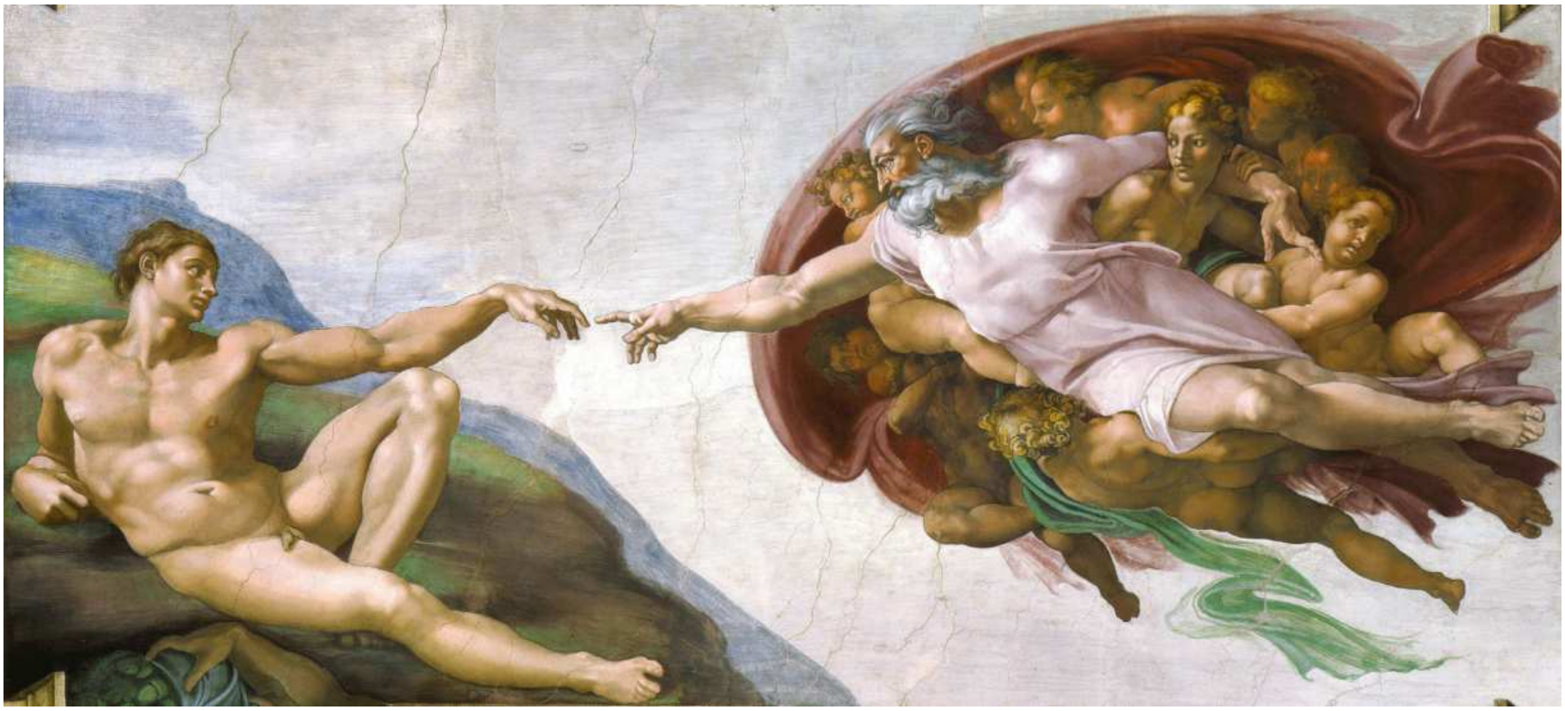


Far left: Michelangelo drawing featuring Vittoria Colonna, c.1540

Left: Michelangelo, *The Last Judgement*, east wall of the Sistine Chapel 1534-41

Below: The background images and shapes behind God in *The Creation Of Adam* appear to depict a brain

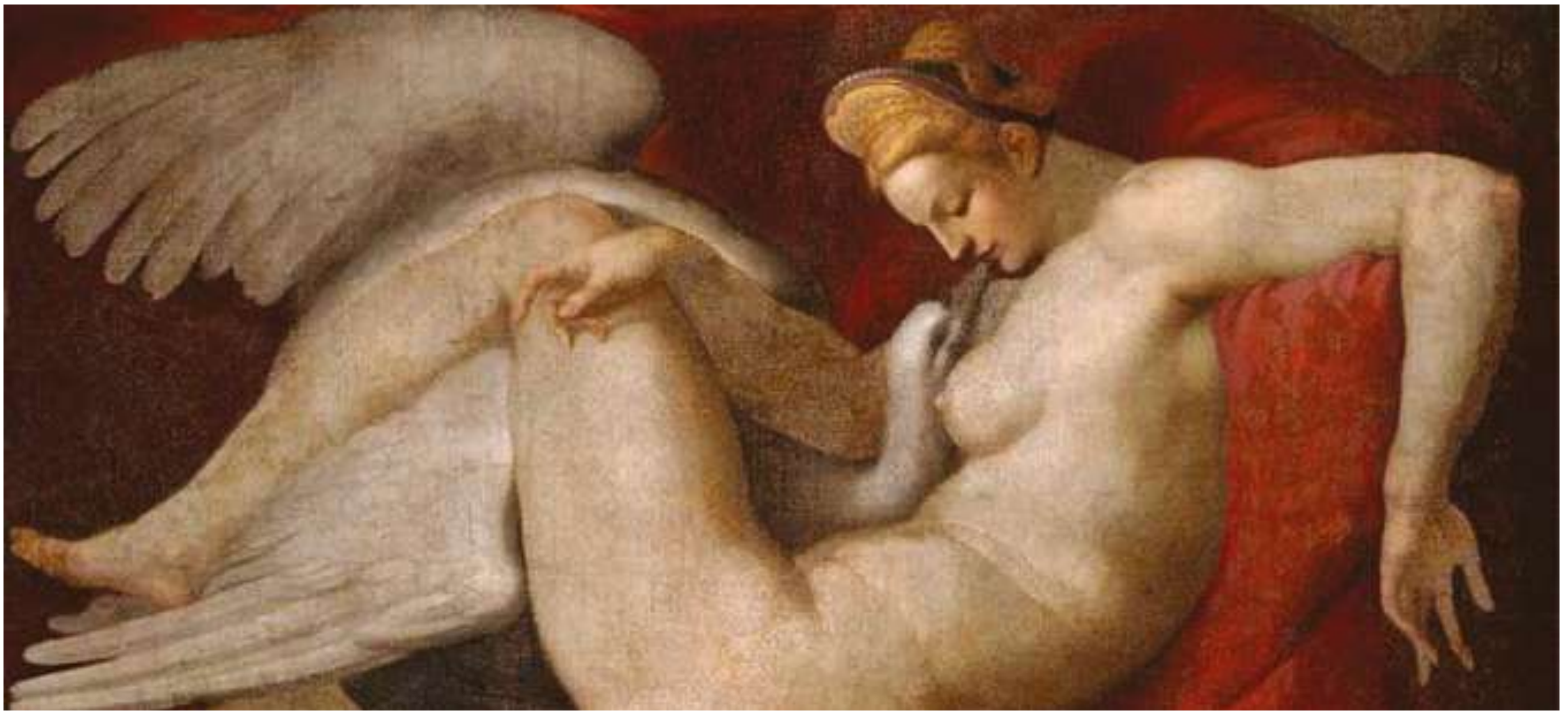
Right: The 16th century copy of Michelangelo's lost *Leda And The Swan*



examining actual corpses to see how bones, muscles, arteries and nerves actually worked.

There has been much speculation about his sexuality. He was one of those rare mortals whose genius 'imprisoned' them, restricting conventional relationships. He admired male beauty and, particularly in later life, had relationships with younger men. Whether these were homoerotic we cannot know. He was necessarily circumspect about them; such relationships were condemned by the Church. They were, however, not uncommon and prosecutions in the ecclesiastical courts were rare. Neo-classical philosophers exalted the teaching of Plato, which idealised non-physical same-sex love (Platonic love) as a way of transcending the material world and ascending to the divine. When he was in his sixties, Michelangelo formed a close attachment to Vittoria Colonna, a younger woman who was a leading intellectual, poet, philosopher, theologian and radical thinker, and who advocated a spirituality akin to that of the major Protestant reformers. In a drawing commemorating their friendship, Michelangelo depicted her as the Madonna lamenting the death of Christ.

But, to return to the closing years of the 15th century, Michelangelo's greatest sculpture of this



period was the massive nude study of David. This statue had a somewhat chequered history. Long before Michelangelo was born, a huge block of marble was delivered to Florence Cathedral for the sculptor Agostino di Duccio to create a figure for incorporation in the building, but he abandoned the project and the stone stood outside the church for almost four decades until the government offered the commission to Michelangelo. He completed the statue in 1504 but its adventures had not yet come to an end. It became the victim, first of political conflict and later, of the weather. Florence's leaders argued about where to put it and when it was finally moved into position, it was pelted with stones by a pro-Medici mob. In a later confrontation of rival factions, the statue's left arm was broken. The damage was eventually repaired but, because the location had been badly chosen, the statue would go on to suffer over succeeding centuries from wind and rain.

> “The artist worked at it for four years... in the utmost secrecy, because he did not want anyone... to see the unfinished ceiling”

In 1505 Michelangelo was summoned to Rome by Pope Julius II to design and create a grandiloquent tomb that would proclaim his greatness to all later generations. Michelangelo threw himself into this prestigious project but political and other factors intervened and, when the work did not proceed as the artist wanted, he stormed out in a rage and returned to his home city. Julius ordered him to return, not only to continue to resume his labours on the tomb but also to take up a mammoth painting project. He wanted a series of panels for the ceiling of the Vatican's Sistine Chapel. Michelangelo and Julius were both strong characters but the marvel that is the Sistine Chapel was the child of their stormy relationship. Julius, the 'warrior pope' was dedicated to creating a new, rebuilt Rome as the symbol of a papacy that was re-asserting its political power. The design for the ceiling was a complex series of biblical narratives involving around 300 figures. The artist worked at it for four years, behind locked doors in the utmost secrecy, because he did not want anyone – especially rivals – to see the unfinished ceiling with its dramatic realisation of Old Testament stories from the Creation to incidents in the life of David as well as representations of prophets and sybils. The scope, the detail, the colour, the figures so lifelike they seemed about to move, as Vasari said, “reduced observers to stunned silence” and the conception and its realisation immediately influenced the work of other artists. Twenty-five years later, at the behest of Pope Clement VII, Michelangelo crowned his work in the Sistine Chapel with a depiction of the Last Judgement for the east wall. The theme was a common one, having adorned many medieval churches, but the treatment by the artists was a novel one. All the figures – whether they be mortal, heavenly or hellish – were depicted as nude humans, displaying a wide range of emotions. This caused a long-running protest in Church circles and, soon after the artist's death, the genitalia of the figures were discreetly covered with draperies. The censors saw the religious subject as debased by classical paganism. Michelangelo's vision was just the opposite: Christian truth made comprehensible by classical realism.

DEFINING MOMENT

Laocoön – a mystery

In 1506, the remarkable antique statue of *Laocoön And His Sons* was dug up in a Roman vineyard by a group of artists including Michelangelo. But was it? It is known that Michelangelo made copies of small antique works for sale and did a brisk trade in them. Were the products of his counterfeiting activity sold as honest copies or fakes? Was *Laocoön* the most audacious fake of all?

1506

Michelangelo never finished the tomb of Pope Julius. He was prodigiously busy. As well as numerous sculptures, he produced designs for the dome of St Peter's Basilica and oversaw the extensive rebuilding of the Palazzo Farnese, regarded as the most imposing High Renaissance palace in Italy. The artist's workload is all the more remarkable when it is realised that he seldom employed assistants.

Michelangelo Buonarroti died in Rome in 1564 at the remarkable age of 88. Pope Pius IV wanted Rome to keep him and decreed that he should be buried in the Vatican, but the artist's wishes were ultimately respected and his body was returned to Florence. Vasari, who designed his tomb, wrote of him, “he was sent into the world to be an example to men of art, that they should learn from his life and from his works.”

How was the Sistine Chapel's ceiling painted?

Explore the tools and techniques behind Michelangelo's lofty Renaissance masterpiece

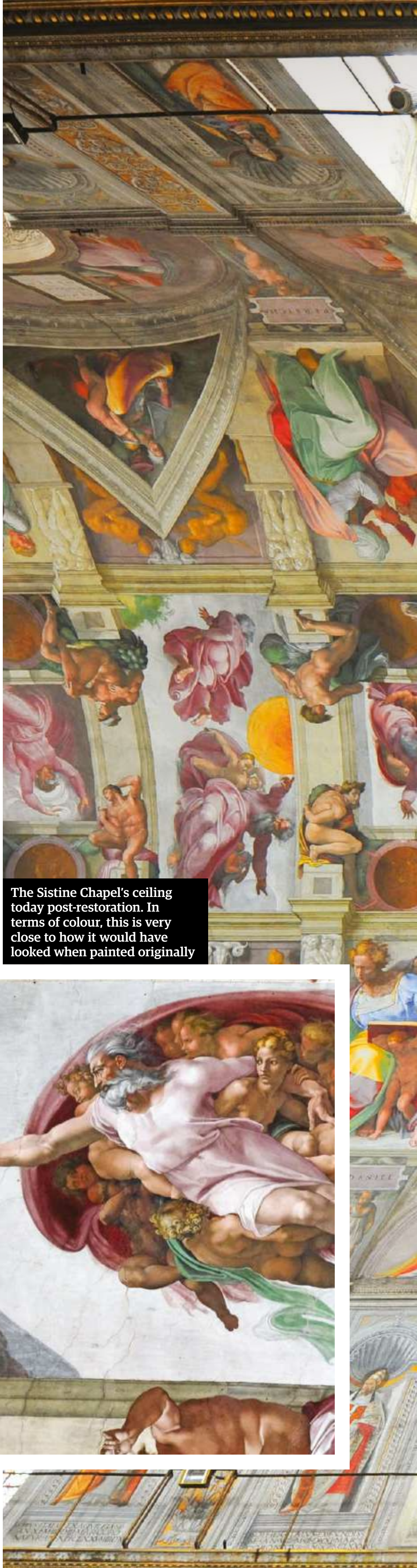
In painting the Sistine Chapel's ceiling in the early part of the 16th century, Michelangelo had to overcome a number of daunting hurdles. The first comes directly from the physical properties of the ceiling, as it is a barrel vault, which is a curved surface. To make it more difficult still, that barrel vault is intersected with smaller vaults positioned over the windows. As such there are no flat surfaces anywhere except around the windows, where the artist also painted a series of half moon-shaped lunettes. As a result, even prior to picking up a paintbrush Michelangelo had to first work out how to create realistic portrayals of human figures in proper proportion and in motion on these wildly uneven surfaces. His ability to pull this off is testament to his immense artistic skill.

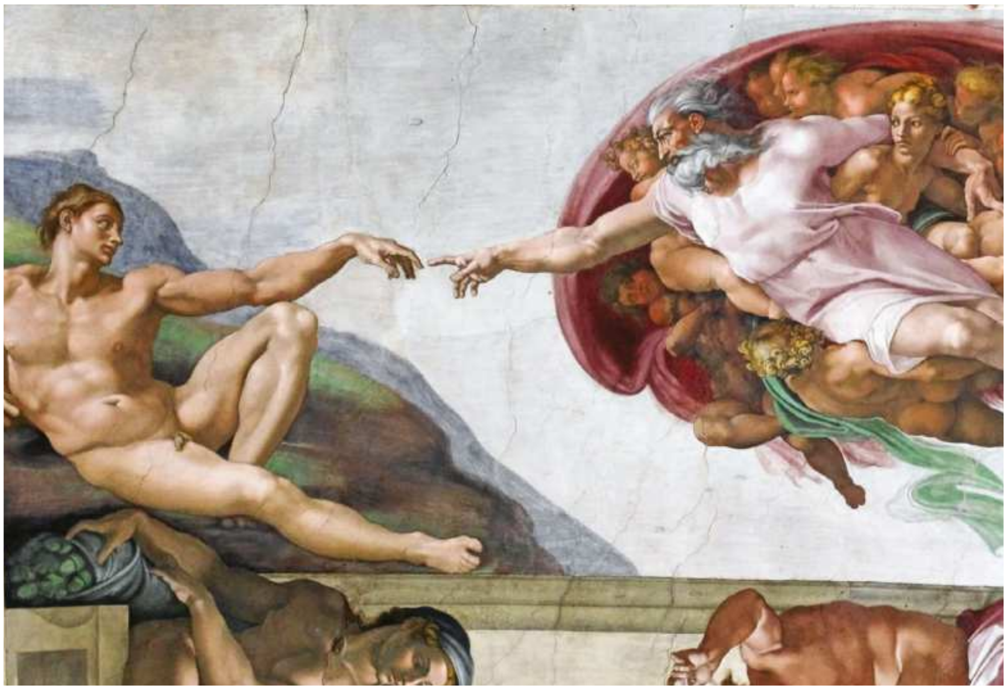
Another major challenge in painting the Sistine Chapel's ceiling was actually getting up there, as it is 20 metres (65 feet) above the floor. Fortunately, a conservation campaign that started in the Eighties revealed the method Michelangelo employed to reach such heights: he constructed a complex scaffold. The scaffold consisted of a truss bridge that spanned across the vault and ran on rails that were at a 90-degree angle to the walls. This permitted Michelangelo to access all areas of the ceiling as the scaffolding could be moved along the rails – it was only ever covering a quarter of the vault at any one time, as he needed ambient light from the windows to paint. Interestingly, the holes that supported this structure can still be seen in the walls to this day.

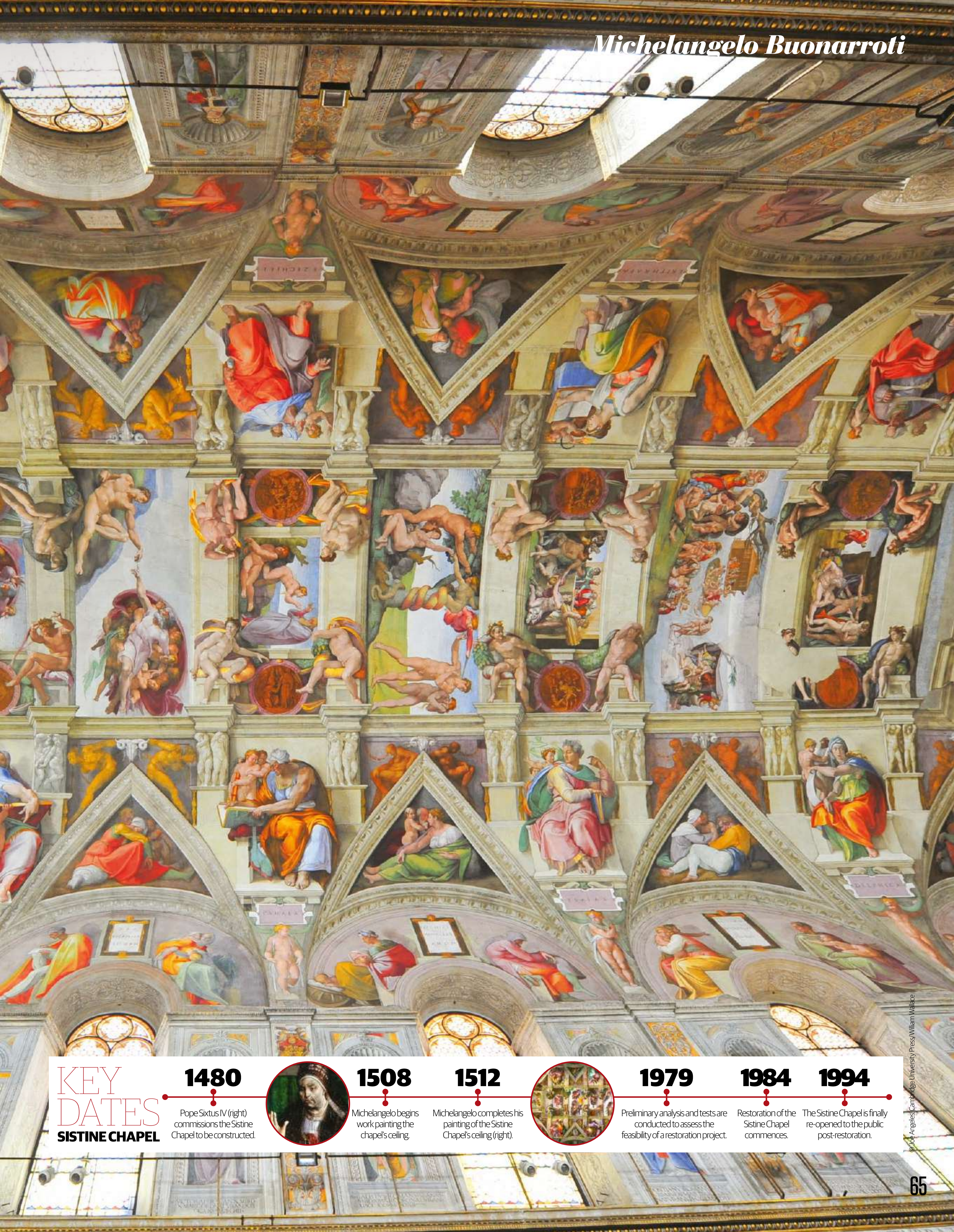
The third problem Michelangelo had to tackle was how to lay out the sketch lines for the entire ceiling. He did this by dividing the vault into various units by stretching chalked strings from one end of the chapel to the other (with help from assistants), before snapping them against the prepared plaster. In doing this, he laid out the linear structure of all the architecture, which is consistent throughout.

The last major obstacle that Michelangelo faced was the sheer scale of the project, which incredibly only took four years to complete. Painting the ceiling was a massive logistical undertaking and so he invited some of his friends from Florence to Rome to aid him.

As well as painting some of the recurring elements, such as columns and statues, these assistants helped Michelangelo build the scaffolding and mix/prepare the plaster, as well as lending a hand with the manufacture of paints, the trimming of paintbrushes and the sketching of full-sized drawings on paper for transferral onto the vault. This latter process involved the paper sketch being pressed against the ceiling, pricked with small holes around the outlines and then covered with black chalk dust to produce a dotted outline on the plaster.


The Sistine Chapel's ceiling today post-restoration. In terms of colour, this is very close to how it would have looked when painted originally





KEY DATES SISTINE CHAPEL

1480 Pope Sixtus IV (right) commissions the Sistine Chapel to be constructed.

1508 Michelangelo begins work painting the chapel's ceiling.

1512 Michelangelo completes his painting of the Sistine Chapel's ceiling (right).

1979 Preliminary analysis and tests are conducted to assess the feasibility of a restoration project.

1984 Restoration of the Sistine Chapel commences.

1994 The Sistine Chapel is finally re-opened to the public post-restoration.

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Written by
Derek Wilson

Raphael

1483-1520

One of the most 'human' of the humanist Renaissance artists, Raphael's works display not just technical skill, nor just genius, but love

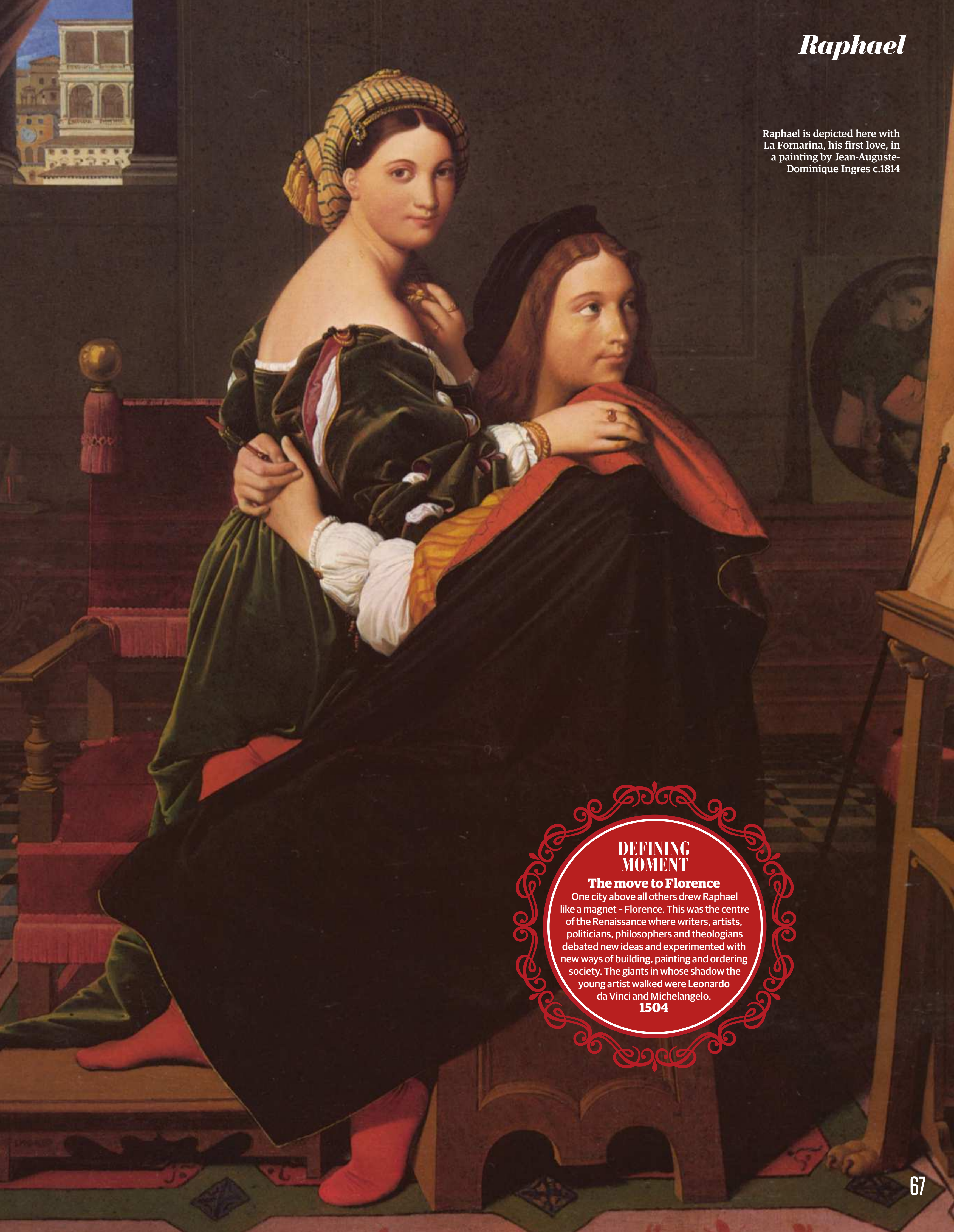
He was born Raffaello Santi, the son of Giovanni Santi, court painter to the Duke of Urbino, a hilltop town on the eastern slopes of the Apennines. It commanded extensive views over fields, woods and vineyards that were dear to the growing boy, and landscape would always play a major part in his artistic output. His was a comfortable and highly favoured upbringing, for the Montefeltro family who ruled from the magnificent ducal palace were generous and enlightened patrons of the arts.

They thought highly of Giovanni and paid him well. An important change was underway in master-and-servant relationships in the 15-century city states of North Italy. In earlier times artists had been mere hired artisans hired – usually by churchmen – to carry out their employers' wishes, but now enlightened rulers valued painters, architects, sculptors and scholars more highly. Talented protégés embellished a prince's court and enhanced his prestige. Cultivating the arts of peace was valued as highly as developing the weapons of war. Men like Giovanni Santi were valued, not just for their technical skills, but for their ideas, their knowledge of the latest fashions. Giovanni and his family were housed in a commodious house in the centre of Urbino. But Raphael's early years were not without difficulties. His mother died when he was eight and his father followed her to the grave when the boy was 11. Raphael's talent was already obvious and he was placed by his uncle and guardian in the workshop of Pietro Perugino, who maintained busy ateliers in Perugia and Florence. There could have been no better time for Raphael to learn his craft, for this was the period we now know as the 'High Renaissance'. Painters, architects and all kinds of craftsmen were much in demand, as church leaders and civic rulers competed to decorate their houses, public buildings and places of worship with works of art in the latest style. Commissions in plenty from discerning patrons meant that artists had opportunity to develop their skills and explore new ideas. Raphael's reputation grew and, by the age of 17, he was attracting patrons on his own account.

Like most artists, he led a peripatetic life, executing an altarpiece here, a fresco there and the portrait of a courtier somewhere else. However, thanks to the wealth generated by trade, it was in Florence that there were many generous patrons ready to commission new works for their churches, houses and civic buildings. This was where the now-independent Raphael lived from 1504 to 1508, throwing himself into his work with all the vigour of youth. This was where he absorbed and made his own the new classicism. Giorgio Vasari who, in 1550, published *Lives Of The Most Excellent Painters, Sculptors And Architects*, described a discussion group which met regularly in the studio of the architect Baccio d'Agnolo. "Among the foremost attenders," he wrote, "was Raphael of Urbino, then a young man."

In his early twenties, the newcomer was already contributing his own ideas. What those ideas were we can see from his earliest signed work, *Crucifixion With Saints*, painted for a church in the Umbrian city of Città di Castello. Traditional depiction of religious scenes had displayed holy figures with halos, sometimes set against a gilded background to indicate the timeless, heavenly significance of the events portrayed. Later treatments of such subjects would present them as historical happenings set in the everyday world. Raphael's *Crucifixion* stands midway between the two. Set in a real landscape occupied by real people, the painting yet conveys the numinous by its radiant blue sky populated by dancing angels.

A type of painting for which demand was growing was the portrait. Patrons had sometimes paid to have their likenesses included as 'observers'



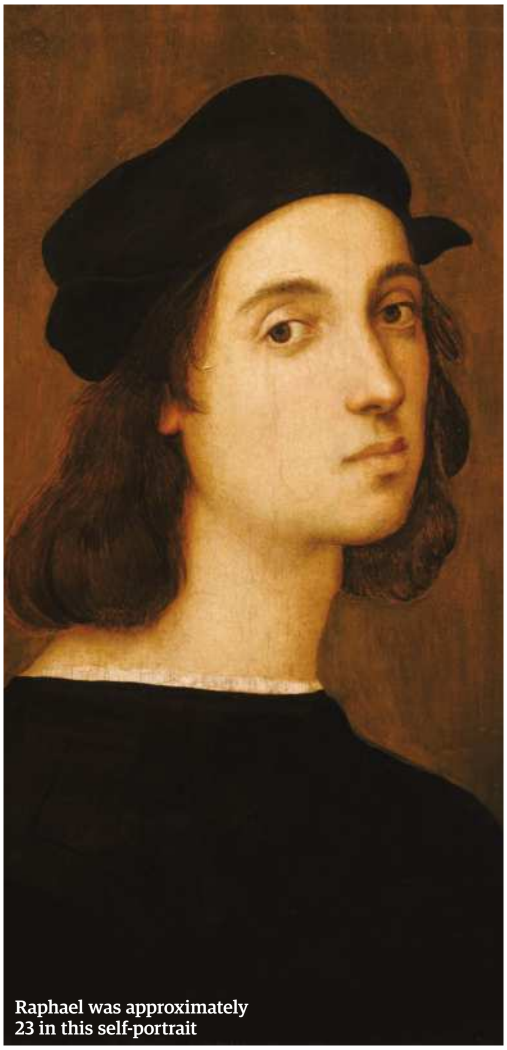
Raphael is depicted here with La Fornarina, his first love, in a painting by Jean-Auguste-Dominique Ingres c.1814

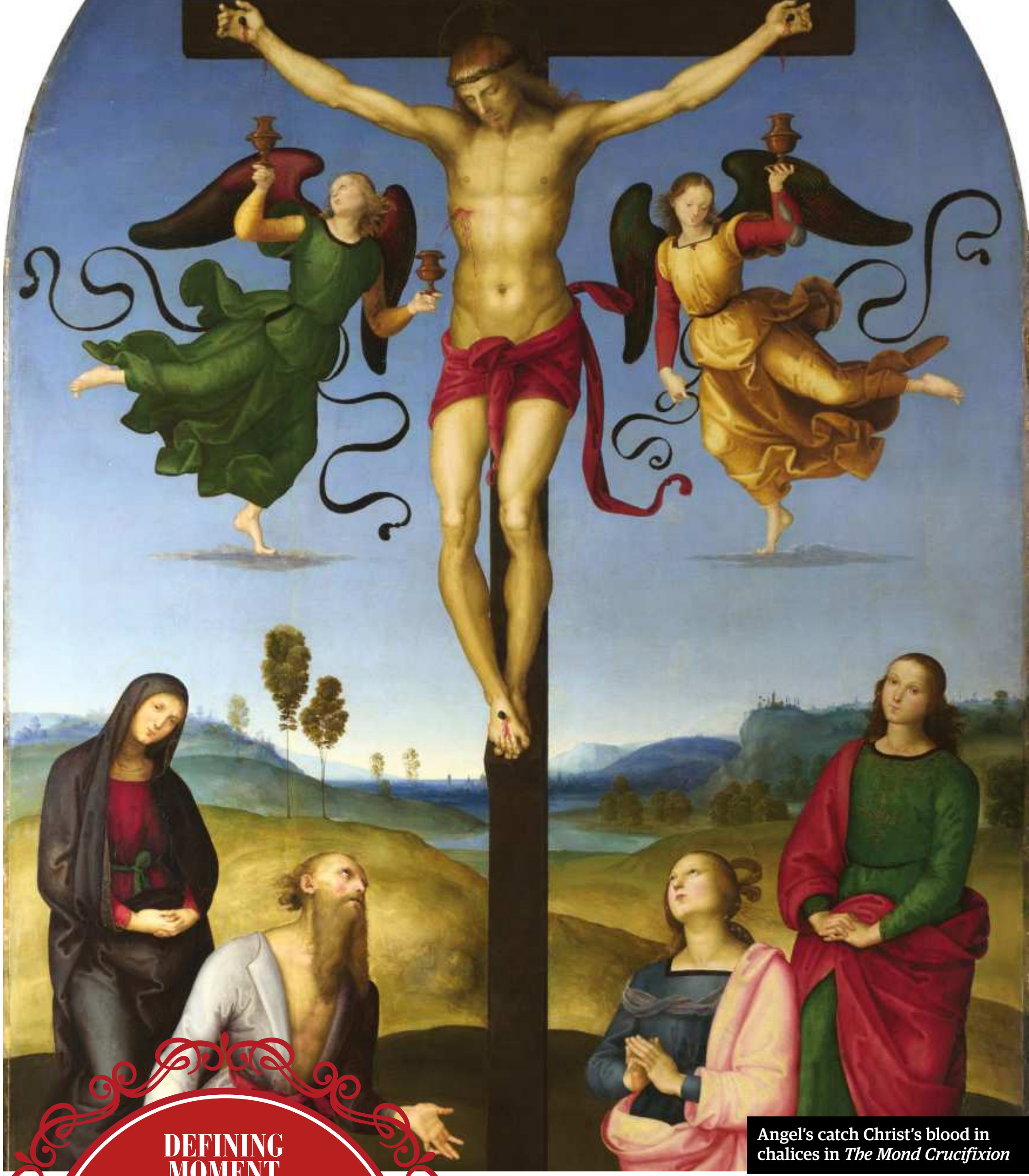
DEFINING MOMENT

The move to Florence

One city above all others drew Raphael like a magnet – Florence. This was the centre of the Renaissance where writers, artists, politicians, philosophers and theologians debated new ideas and experimented with new ways of building, painting and ordering society. The giants in whose shadow the young artist walked were Leonardo da Vinci and Michelangelo.

1504


Raphael was approximately 23 in this self-portrait

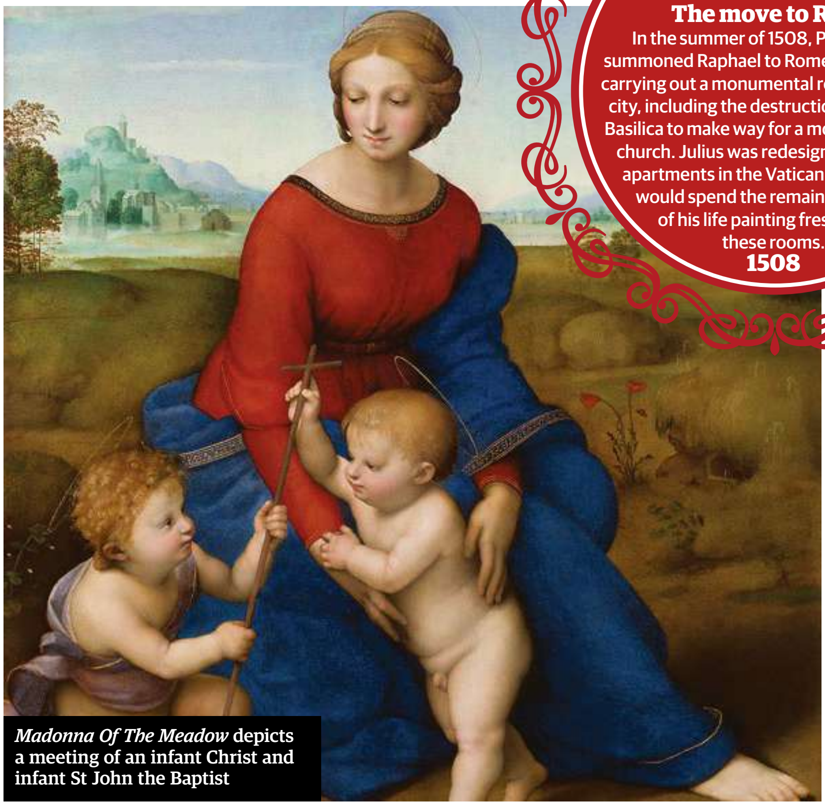

Angel's catch Christ's blood in chalices in *The Mond Crucifixion*

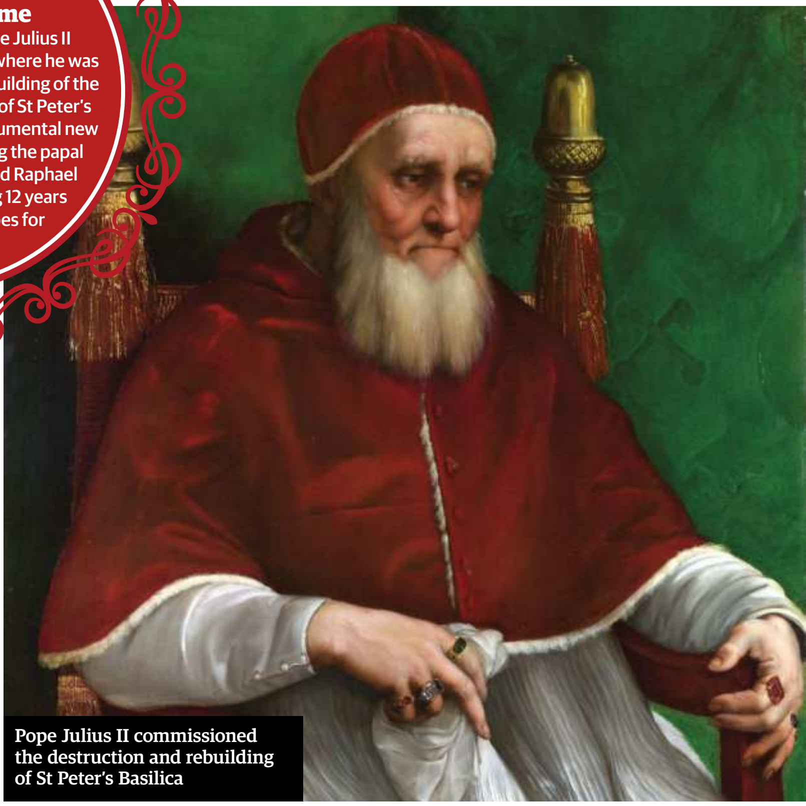
DEFINING MOMENT

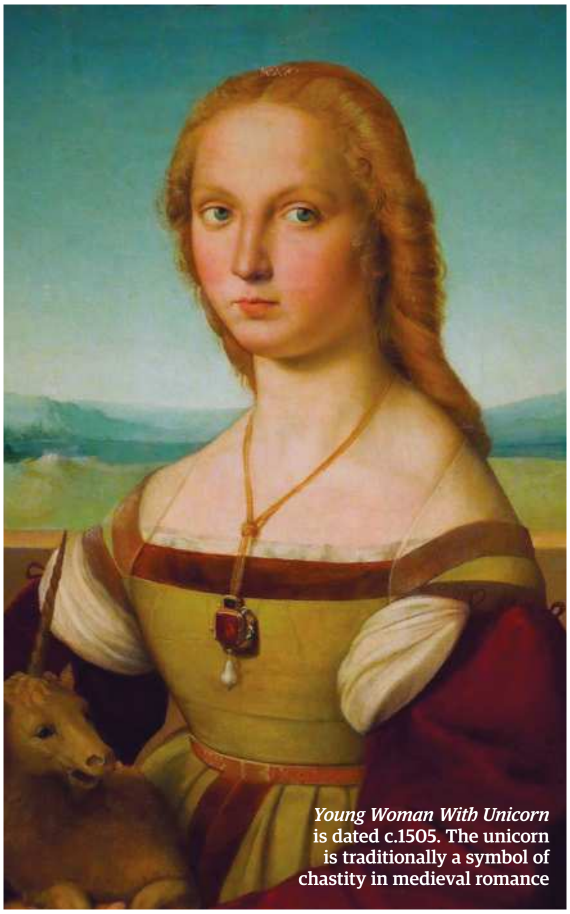
The move to Rome

In the summer of 1508, Pope Julius II summoned Raphael to Rome, where he was carrying out a monumental rebuilding of the city, including the destruction of St Peter's Basilica to make way for a monumental new church. Julius was redesigning the papal apartments in the Vatican and Raphael would spend the remaining 12 years of his life painting frescoes for these rooms.

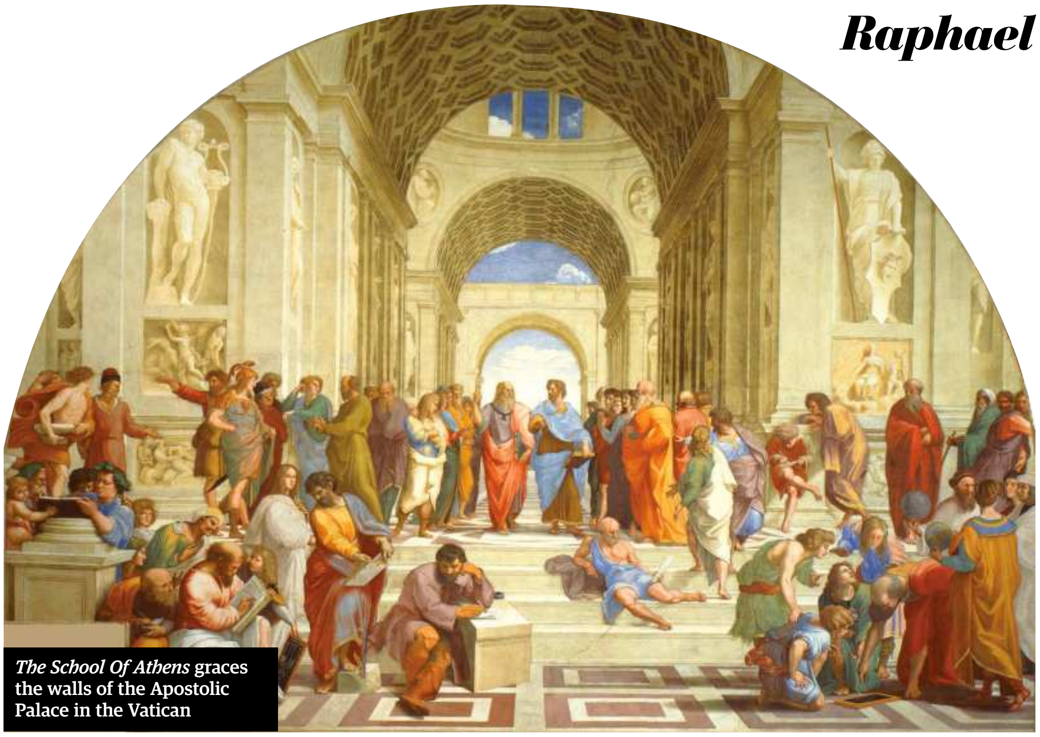
1508


Madonna Of The Meadow depicts a meeting of an infant Christ and infant St John the Baptist


Pope Julius II commissioned the destruction and rebuilding of St Peter's Basilica



Young Woman With Unicorn is dated c.1505. The unicorn is traditionally a symbol of chastity in medieval romance



The School Of Athens graces the walls of the Apostolic Palace in the Vatican

or 'participants' in religious scenes, but during the Renaissance years several prominent men and women ordered artists to depict their faces in paint, either as gifts for loved ones or to capture their features for posterity. Artists, on the other hand, were fascinated by the challenge presented by the human face. They made portraits to celebrate the ideal of beauty or in response to the challenge to capture the 'mind behind the face'. With the exception of Leonardo's *Mona Lisa*, no-one in Florence was better at female portraiture than Raphael. The subject of his *Lady With A Unicorn* might have been a member of the ducal court at Urbino, for the unicorn was an emblem of the ruling family. It could equally well be a tribute to virginity because that was also symbolised by the unicorn. What is beyond question is that Raphael has captured the look, half-uncertain, half-defiant of a beautiful girl on the verge of womanhood.

Raphael's portrait of Pope Julius II (painted in 1511-12) could hardly be more different, though equally telling. Julius (Giuliano della Rovere) was one of the most dynamic occupants of the papal chair. Elected in 1503, he was known as the 'warrior pope' and 'il pontefice terribile'. In ten brief years he cleaned the Augean Stables of Vatican corruption, led his own troops in battle to put an end to French interference as well as beginning the radical rebuilding of Rome. But Raphael's portrait is not that of a powerful force for change. It was painted in the last year of Julius's life when his grandiose schemes had bankrupted the papal treasury. Raphael shows us a tired old man racked by gout and syphilis and contemplating the ruin of all he had laboured for.

Few people knew the pope better. Raphael had almost daily audiences with his patron who took a close – almost obsessive – interest in the ongoing work. While the secretive Michelangelo was working at the ceiling decoration of the Sistine Chapel behind locked doors, Raphael was transforming the suite of rooms where the pope received guests and conducted business. One story tells how Donato Bramante, the papal architect, let Raphael in for a peep at the amazing work the older artist was doing and what he saw inspired Raphael's own labours. The most breathtaking of the frescoes are the two large panels facing each other in the Stanza della Segnatura. They swarm with figures that encapsulate much of what the Renaissance was about, the quest for truth through both divine revelation and philosophical enquiry. *In The Disputation Over The Sacrament*, God, Father, Son and Holy Spirit, flanked by Old Testament prophets and New Testament saints, bestows the sacrament of the mass, while on a lower level theologians agitatedly discuss the meaning of this miracle. Opposite this fresco stands what has, since the 18th century, been known as *The School Of Athens*. Within a vaulted space flanked by Doric pillars Raphael presents a galaxy of the great thinkers of antiquity – Aristotle, Socrates, Plato, Euclid and others. The faces the artist gives these intellectual heroes are those of some of Raphael's contemporaries and, on the extreme right, he has included himself. These two great frescoes indicate clearly what the Renaissance was about – a bringing together of the great traditions represented by Greco-Roman intellectual enquiry and the divine revelation vouchsafed to the Christian church.

Impressive though such complex compositions are, it is his more intimate portrayal of the Madonna and child that have especially endeared him to people over the centuries. Raphael returned to this subject over and again, executing orders for clients who wanted images for church décor or personal devotion. No less than 17 versions have survived, all employing the triangular composition the artist had made very much his own.

Raphael was still working on the Vatican projects when Julius II died in 1513. The new pope, the extravagant and fun-loving Leo X, employed the artist on yet more ambitious projects, such as designing a set of tapestries describing the lives of St Peter and St Paul. Raphael was now extremely wealthy and living in his own palazzo opposite the basilica that slowly took shape.

Vasari described him in his later years walking the streets of Rome surrounded by an entourage of apprentices and doting admirers. But in 1520 this artistic celebrity fell sick with a fever and, on his 37th birthday on 6 April 1520, he died.

This most endearing and approachable of Renaissance artists remained popular over succeeding centuries as the one above all others who represented classicism with a human face. In 1833 his tomb was opened for devotees to gaze on his remains. So strong was his influence that progressive artists in the mid-19th century felt the need to break away from it. They called themselves the Pre-Raphaelite Brotherhood.

DEFINING MOMENT

The story of La Fornarina

There is a rumour that he was in love with one of his models who posed for some of his Madonnas and for a semi-nude portrait. By the 19th century she'd been dubbed 'La Fornarina', 'The Baker's Daughter'. In 1814 the French artist, Ingres, turned the legend into art, depicting the artist with La Fornarina on his lap, gazing at an unfinished portrait of her. But who was she? We'll never know.

Titian

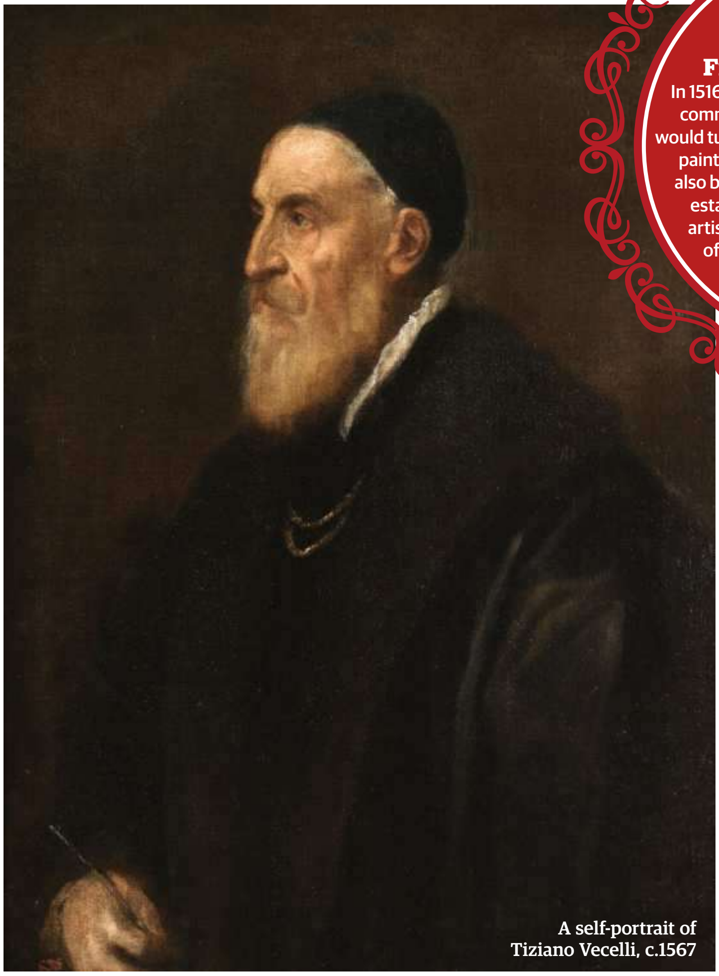
c.1488-1576

Harnessing the vibrancy of oil paints to innovative effect, the versatility of the man nicknamed the 'Prince of Painters' saw him become the greatest artist of his generation

Born Tizano Vecellio in what is now Pieve di Cadore, near the Dolomite Mountains in Italy between 1488 and 1490, Titian is regarded as one of the greatest painters of the Renaissance. A highly versatile artist, his expert use of colour and his intricate strokes helped define a style that had a profound influence on future generations of western art.

His most famous works include *Bacchus And Ariadne* (originally commissioned by Alfonso I d'Este, Duke of Ferrara for the Alabaster Chambers in the castle at Ferrara, but is now hanging in the National Gallery in London), *Diana And Actaeon* (which was acquired by the National Gallery in London and the National Gallery in Scotland for £50 million in February 2009) and, perhaps his greatest masterpiece, *Assumption Of The Virgin*, which is located on the high altar in the Basilica di Santa Maria Gloriosa dei Frari, a church in Venice. Depicting the Virgin Mary being raised to the heavens by cherubim while perched on a cloud, *Assumption Of The Virgin* is among the most famous paintings of the Renaissance and is considered by many to be Titian's masterpiece.

The son of a modest official, Gregorio di Conte dei Vecelli, and his wife, Lucia, Titian was sent to Venice at the age of nine, along with his brother, Francesco, to become an apprentice to Sebastiano Zuccato, a master of mosaics. The young Titian then joined the workshop of Giovanni Bellini, considered to be the greatest Venetian painter of the day. Bellini's influence was evident in Titian's


A self-portrait of Tiziano Vecelli, c.1567

DEFINING MOMENT

First major commission

In 1516, Titian began work on his first major commission for a church in Venice. What would turn out to be *Assumption Of The Virgin*, painted for the church's high altar, would also be perhaps his greatest masterpiece, establishing him as one of the leading artists of the era thanks to his deft use of colour and his renderings of the human form.

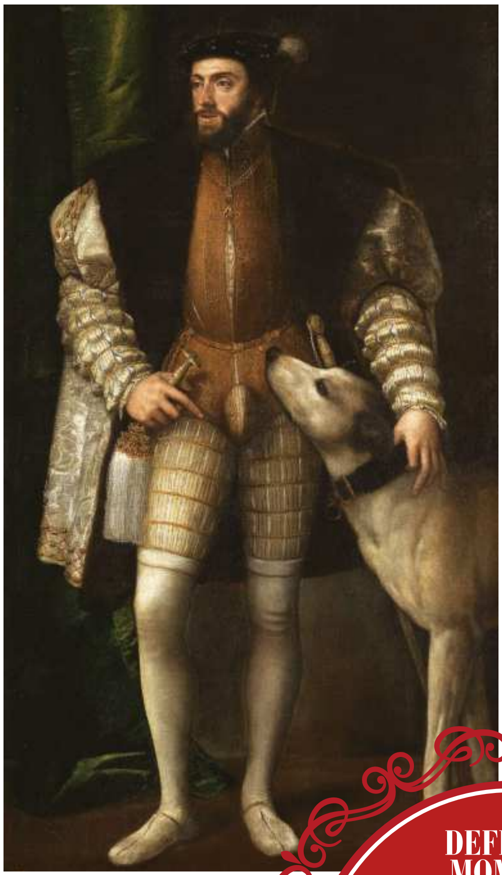
1516

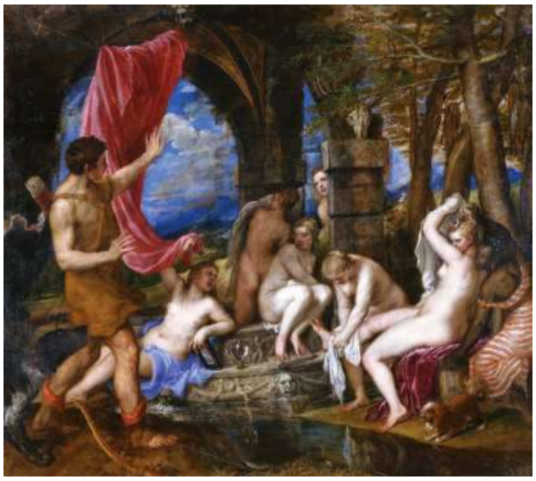
Right: This full-length portrait of Charles V (1533) was highly innovative at the time and lead to Titian becoming the most in-demand artist in Europe

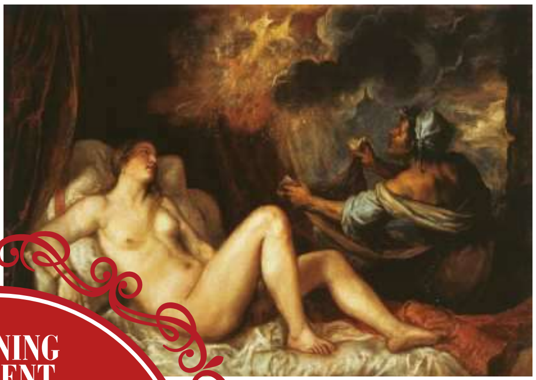
Right top middle: *Diana And Actaeon* (1556-1559) is one of seven poesis that depicted Actaeon's encounter with a naked Diana a showcases Titian's celebration of the female form

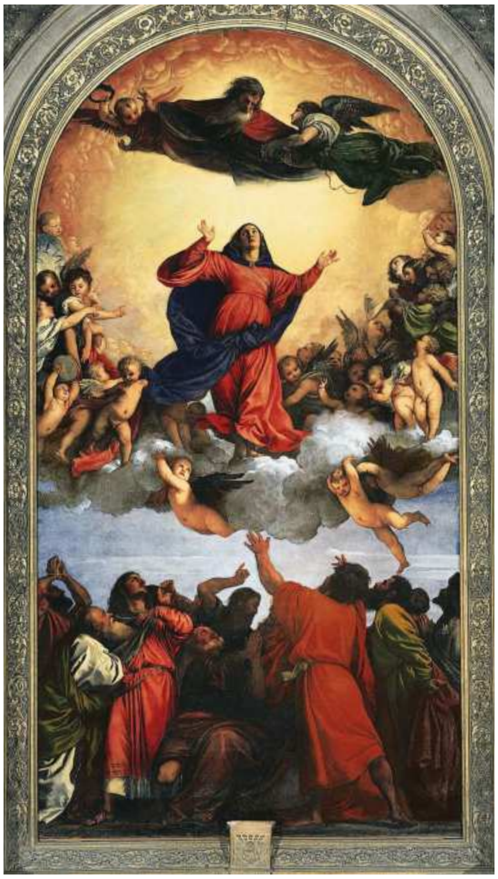
Right: This image, depicting Zeus, the king of the Gods, visiting Danaë in the form of golden rain lead to a famous put-down by Michelangelo Buonarroti

Far right: *Assumption Of The Virgin*, was Titian's first major commission and is widely regarded as his finest masterpiece









DEFINING MOMENT

From tragedy to triumph

The year 1530 had contrasting fortunes for Titian. On the one hand he suffered the tragic loss of his wife, Cecillia, and on the other he met with the Holy Roman Emperor Charles V in Bologna. This meeting lead to Titian painting a full-length, life-size portrait of the emperor, which was extremely innovative at the time, and saw him become the most in-demand painter in Europe.

1530

early works and also those of another young artist named Giorgione of Castelfranco. The two fledgling painters collaborated in 1508 on the frescoes of the Fondaco dei Tedeschi, headquarters of Venice's German merchants. Though only ruined outlines of these frescos survive, etchings carried out in 1760 provide a greater sense of the idealism and the sense of physical beauty that characterised the work of both artists.

In 1516, Titian undertook his first major commission, the aforementioned *Assumption Of The Virgin* for the Santa Maria Gloriosa dei Frari church. This work helped to establish Titian as one of the leading painters of the era and showcased his use of colour and appealing renderings of the human form. Shortly after completing *Assumption* in 1518, he painted *The Worship Of Venus* – a painting inspired by mythology commissioned by Alfonso I d'Este, duke of Ferrara. The duke was one of several royal patrons that Titian provided work for, including King Philip II of Spain and the Holy Roman Emperor Charles V. Many of the Venetian community's artists frequented Titian's home and he forged close friendships with the writer Pietro Aretino and the sculptor Jacopo Sansovino, which helped him professionally, too. Sadly, as his professional life boomed, Titian's private life became tinged with tragedy as his beloved wife Cecillia, whom he married in 1525 and who bore him three children, suddenly passed away in 1530.

Titian's painting style was at odds with the works of other Renaissance painters of the era and were created spontaneously rather than lined out and filled in. Working on rough canvases on which the paint catches, Titian's works were gradually built up to explode with colour and texture, a style that baffled his contemporaries. While Titian was working in Rome in the 1540s, Michelangelo visited his studio and saw his painting of a naked Danaë reclining on a bed (based on a tale from ancient mythology in which Zeus takes the form of a shower of gold to make love to Danaë). While praising the work to Titian's face, Michelangelo remarked upon leaving that, while the colouring was very nice, it was a pity that Titian couldn't draw. This apparent put-down illustrated the fundamental difference between Florentine art, in which paintings are lined out and then filled in, and Venetian art that was defined by space and colour. In fact, many of Titian's most famous paintings focused on erotic mythology, as seen in paintings such as *Diana And Actaeon*, one of seven poesies that depict the famous Theban hero, Actaeon's encounter with a naked Diana, who subsequently turns him into a stag, and *Venus Of Urbino* that shows the naked goddess Venus reclining on a bed, seemingly basking in her nudity. These works revealed Titian's deep love of women and great appreciation for their naked form. Rather than depicting them as being vulnerable in their nudity, they were shown as heroic, confident and alive, bathed in vibrant colours to truly celebrate their beauty.

> "Titian's works were gradually built up to explode with colour and texture"

Titian continued to paint right up until his death in 1576, although it is uncertain whether he eventually succumbed to old age or the plague, which was raging through Venice at the time and which claimed the life of his son, Orazio, a few months later. Whatever the cause of death, the fact that Titian lived such a long life was quite the feat at a time when seeing out your thirties was something of an achievement. Through the rich body of work that Titian left behind, he inspired countless generations of artists, including Rembrandt, Diego Velázquez, Anthony van Dyck and Peter Paul Rubens, and his art remains endlessly fresh and inspiring to this day.

Tycho Brahe

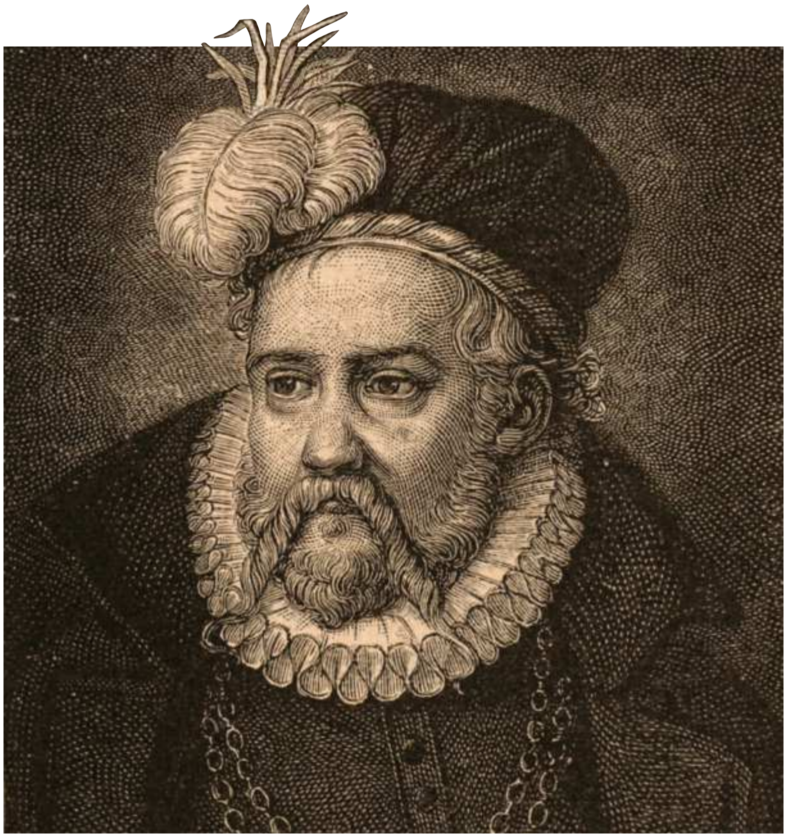
1546-1601

Meet the man who coined the term 'nova' and calculated planetary motion before telescopes

Few other naked-eye astronomers have plotted the movement of planets quite as accurately as Danish nobleman Tycho Brahe. His observations of a new star in 1572 and the Great Comet of 1577 helped to shake off the Aristotelian belief that the planets and stars were unchanging and locked in 'immutable' celestial spheres.

Brahe's schooling began at an early age. Indeed, at just two years old, he was taken from the family home by his uncle to start his education. At age 12, he began studying law at the University of Copenhagen, as was the norm for sons of nobility. However, while the solar eclipse of 1560 cast a dark shadow across the Earth, it lit Brahe's passion for astronomy, and he immersed himself in the works of the great astronomers of the time.

For some time Brahe studied abroad, but upon his return another uncle - Steen Bille - funded the construction of an observatory and chemical laboratory at Herrevad Abbey. It was here in 1572 that he first noticed the appearance of a very bright star. At the time, the popular theory was that the planets and stars were carried on material spheres that fitted tightly around each other. Brahe's observations proved that his sighting was indeed a new star and not a local phenomenon, and



Left: Brahe was the last of the major naked eye astronomers, working without telescopes

Right: Brahe proposed a 'geo-heliocentric' model with the Earth at the centre of the universe

Far Right: An artist's impression of Brahe's observatory on Hven

A LIFE'S WORK

A quick guide to Tycho Brahe's illustrious career as an astronomer

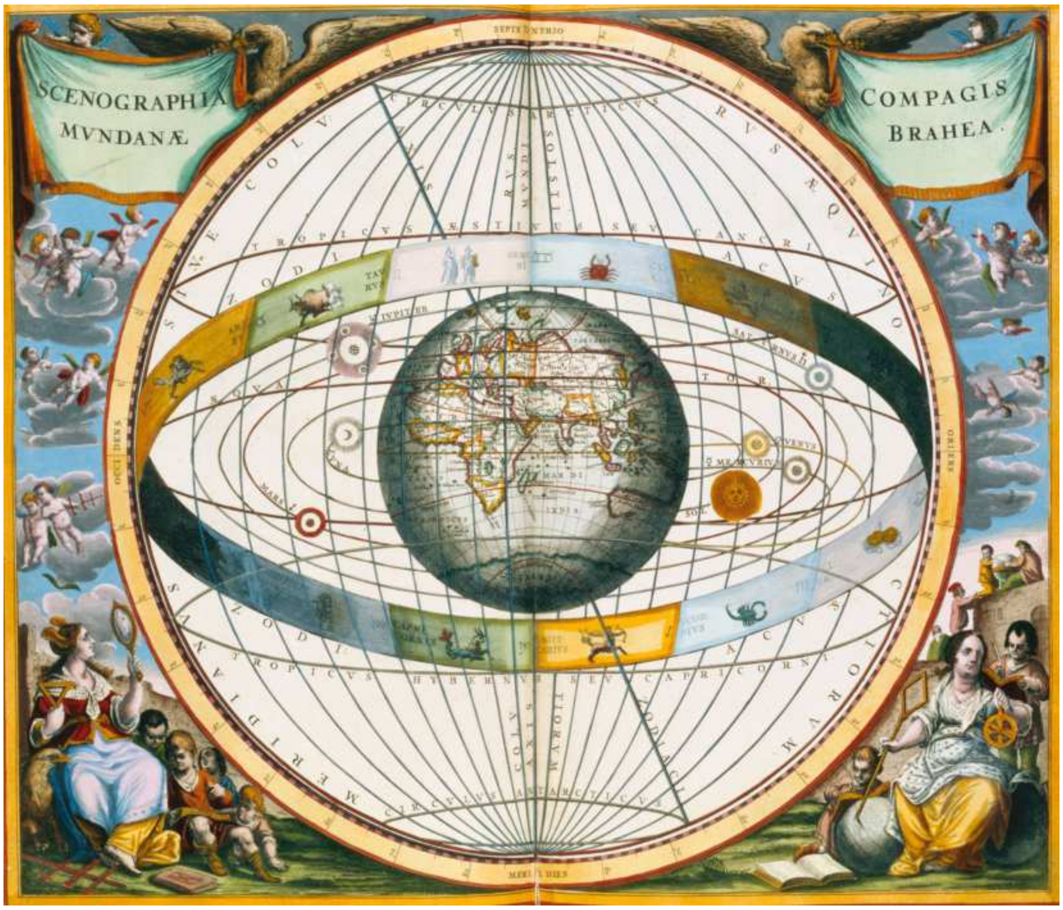
1546
Tycho Brahe is born at Knutstorp Castle in the then-Danish Scania, to nobleman Otte Brahe and his wife Beate Bille.

1559
Brahe begins his studies in law at the University of Copenhagen.

1560
The prediction of a solar eclipse on 21 August 1560 impresses Brahe enormously, and inspires him to study astronomy.

1572
Brahe first observes a new star, now known as SN 1572, from the Herrevad Abbey observatory.

1573
Brahe publishes his book, *De Nova Stella*, coining the term 'nova' for a new star.



> "While the solar eclipse of 1560 cast a dark shadow across the Earth, it lit Brahe's passion for astronomy"

Top 5 facts: Tycho Brahe

1 Naked eye
Brahe was the last of the major naked-eye astronomers, as it wasn't until seven years after his death that the first telescopes came into use.

2 Hard nosed
At the age of 19, Brahe lost the bridge of his nose in a sword fight with a fellow student. For the rest of his life he wore a metal prosthesis.

3 Tycho the tyrant?
It is rumoured that Brahe led an oppressive regime on the island of Hven, and that he was deeply despised by the people living there.

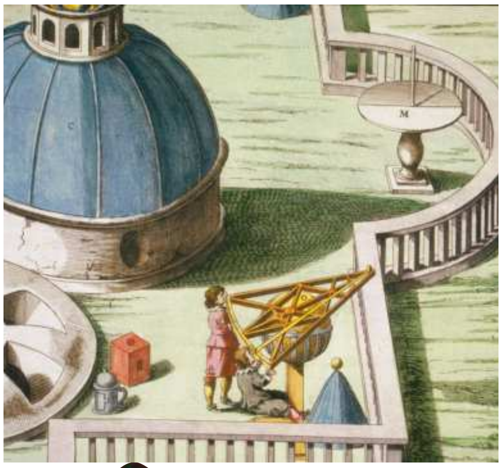
4 Murder mystery
It was suggested that Brahe had been poisoned, but after being exhumed from his grave in 2010, results indicated that he probably died from a burst bladder or similar.

5 Lunar legacy
Brahe lives on among the stars – literally. The crater Tycho on the Moon is named after him, as is the crater Tycho Brahe found on Mars.

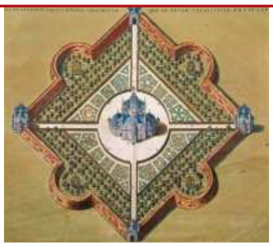
therefore this arrangement was impossible. A year later he published *De Nova Et Nullius Aevi Memoria Prius Visa Stella* (*On The New And Never Previously Seen Star*) and it was from this that the term 'nova' came into common use to describe a new star.

After another tour abroad, King Frederick II, desperate to keep Brahe in Denmark, offered him the island of Hven and funding to set up another observatory. In 1576 Uraniborg was built, and later an underground observatory called Stjerneborg. As well as being observatories, they also functioned as workshops where Brahe designed and built new instruments. With these he was able to make incredibly accurate observations and the precision of his celestial positions was said to be more accurate than any before.

When King Frederick died in 1588, Brahe's popularity declined. In 1599, after falling out with the new king, Christian IV, Brahe left Denmark and moved to Prague (which was then part of Bohemia). Sponsored by Bohemian king Rudolph II, he built a new observatory at Benátky nad Jizerou and was financed by various nobles. Here he was responsible for compiling the Rudolphine Tables – astronomical tables that would allow calculations of the planetary positions for any time in the past or future. Here Brahe also met Johannes Kepler, who came to be his assistant until Brahe's death in 1601 (having never returned to Denmark). He entrusted the continuation of his extensive research to Kepler, who published the finished astronomical tables 26 years later.

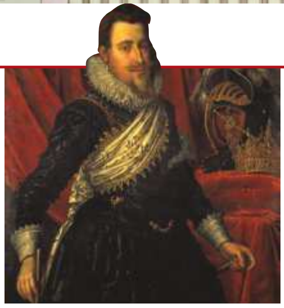


1576
King Frederick II of Denmark offers Brahe the island of Hven, where he builds the Uraniborg observatory.



1577
Brahe's observations of the Great Comet (above) prove that objects can move through the celestial spheres.

1599
After a disagreement with the new Danish king Christian IV (right), Brahe moves to Prague, becoming Bohemia's official imperial astronomer.

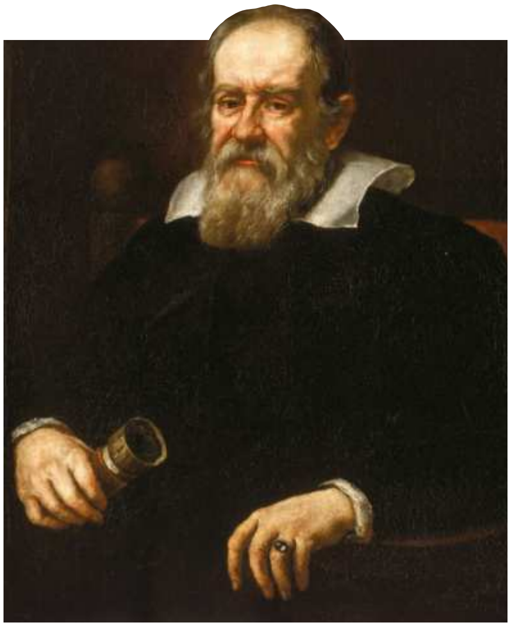


1601
Brahe suddenly contracts a kidney or bladder ailment and dies 11 days later, aged 54.

Galileo Galilei

1564-1642

The father of modern science and one of history's most influential figures, today's astronomers owe Galileo a great debt



Had you been alive in the late-16th and early-17th centuries, Galileo would have challenged, if not changed, the way you looked at the world. His studies into the laws that govern motion, strength of materials and the very nature of scientific method of the time paved the way for scientific advances for the next few centuries. Though the achievement he's best known for was to advocate the heliocentric system, he was such a staunch proponent of this in the face of punitive opposition that the scientific community was forced to re-examine its beliefs.

The world that Galileo was born into in 1564 was as much a boon to his career as a hindrance. On the one hand, contemporary Renaissance-era geniuses like Nicolaus Copernicus and Leonardo da Vinci had already proved the transition between the expanding definitions of the sciences. Italy was a thriving hub for artists, explorers, mathematicians, writers, inventors and more; ideas disseminated with unprecedented freedom and new concepts bubbled up from archaic beliefs, rocking theories of the time that had gone unchallenged for hundreds of years.

On the other hand, Galileo was a tenacious antagonist who lived in Pisa, Italy, at a time when Rome's political power was still very strong and religious censorship was rife. His feud with the Vatican dictated the last few decades of his life, and arguably brought to an end Galileo's run of stellar discoveries prematurely.

In 1588, at the age of 24, he was already a mathematician of some renown in Italy, having circulated his theories on weight and the centre of gravity while lecturing to the prestigious Florentine Academy. It brought him to the attention of the University of Pisa in 1589, which appointed him the chair of mathematics. It was here that he

> "They were so impressed with his re-invention that they immediately doubled his salary and extended his tenure of the chair of mathematics to a lifetime one"

A LIFE'S WORK

A brief look at some of Galileo's key achievements throughout his lifetime

1564
Born 15 February in Pisa, Italy, a city he would return to later in life.

1581
Enrols at the University of Pisa to study medicine, but later decides to study mathematics and philosophy.

1588
Applies for the chair of mathematics at the University of Bologna but doesn't get it.

1592
Galileo's patrons secure him the chair of mathematics at the University of Padua.

1609
Continues research on motion and determines the law of falling bodies after an experiment from the Leaning Tower of Pisa.

1609
Reinvents the telescope and receives substantial financial reward from the Venetian Senate.

As well as four of Jupiter's moons, Galileo also discovered many of the surface features on the Moon and the phases of Venus

performed his experiment from the top of the Leaning Tower of Pisa, dropping various weights to the ground and proving that the speed of an object's fall is not proportional to its weight. The backlash against his attack on Aristotle's theories saw him released from his position in 1592, although he immediately moved on to greener pastures as chair of mathematics for the University of Padua - part of the Venetian Republic. During his time here he would make several contributions to science that would revolutionise astronomy.

Galileo has been so frequently associated with the telescope that he's commonly credited with its invention, which isn't true. The telescope was actually invented in the Netherlands in 1608, proving a watershed for both Galileo's career and science. He saw how to drastically increase magnification through lens grinding and, in August 1609, he presented his improved design to the Venetian Senate. They were so impressed with his re-invention that they doubled his salary and extended his tenure of the chair of mathematics to a lifetime. This invention was also the tool with which Galileo would achieve his magnum opus.

With a telescope that magnified the sky up to 20 times, he was able to discern celestial objects in unprecedented detail, like the Moon, whose surface he discovered was pocked by craters and not perfectly smooth. He was also able to make out four satellites orbiting Jupiter. This flew in the face of the contemporary Aristotelian thinking at the time: that the Earth was an imperfect and corrupt celestial body surrounded by the immutable heavens. The Moon and the planets in fact revolved around the Sun, which was the centre of the known universe and there was more than one centre of motion within this universe.

This revolutionary support of Copernican heliocentrism saw Galileo fall out of favour with the Vatican. After facing an inquisition in Rome, he was sentenced to lifetime house arrest - a relatively lenient punishment at a time when heresy was usually met with torture, prison or death. Galileo continued his work in secrecy and even managed to smuggle a vitally important book summarising his research into motion - *Dialogues Concerning Two New Sciences* - out of Italy and published in the Netherlands, before he died in 1642.

Top 5 facts: Galileo

1 The heretic

Much of Galileo's work was withdrawn and banned during the 17th century by order of the Church. It wasn't until 1718 that reprinting was allowed again.

2 More inventions

In addition to the objective lens and thermoscope, Galileo also invented a geometric compass, a microscope, a pendulum clock and contributed greatly to many other technologies too.

3 Blindness

In 1638 – towards the end of his life – Galileo went blind. Yet even in his final few years he continued with his work, taking on an apprentice to help him who was with Galileo until his death.

4 Not always right

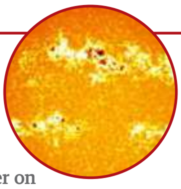
Sometimes Galileo was far from being correct. For example, he disagreed with Kepler's theory that the Moon caused the Earth's tides and believed that they were down to the rotation of the Earth and orbit of the Sun.

5 Jupiter's moons

Galileo discovered the Jovian moons Io, Callisto, Ganymede and Europa. He named them the Sidera Medicea (Medicean stars) after his patron Cosimo II de' Medici. They would later become known as the Galilean moons.

1610
Makes one of his most famous discoveries - what are now known as the Galilean moons of Jupiter.

1613
Publishes a paper on sunspots, called History And Demonstrations Concerning Sunspots And Their Properties.



1623
Il Saggiatore (*The Assayer*) - Galileo's views on physical reality and the scientific revolution - is published.

DIALOGO

1632
Publishes his controversial *Dialogue Concerning The Two Chief World Systems*, falling foul of the Church.

1633
After a commission to examine Galileo's work, he is charged with heresy and sentenced to life under house arrest.

1642
In his final years, Galileo summarises his life's work and teaches a student, before he dies.

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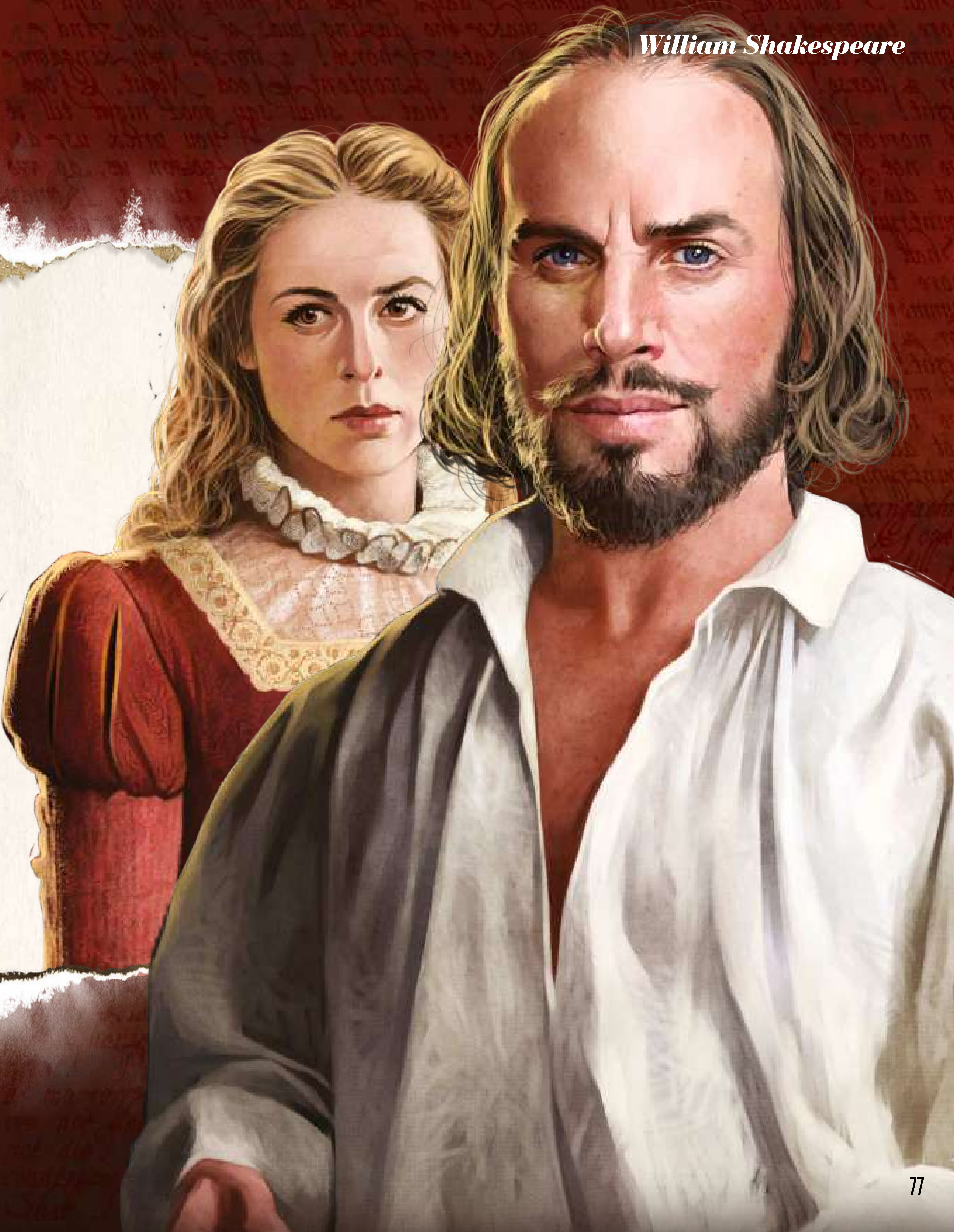
SHAKESPEARE UNCOVERED

His plays are applauded across the globe, but very little is known about the life of our beloved bard. Was he as honourable as we've been led to believe?

You'd be hard pressed to find a soul in Britain - or the Western world, for that matter - who hasn't heard of William Shakespeare. Poet, playwright, actor, and widely considered the greatest writer England has ever seen, he can lay claim to 37 plays, 154 sonnets and two narrative poems. His plays have been translated into every major living language and they are performed more often than those of any other writer in history.

Most will be able to name a play written by him, many will be able to recite a few lines, and some will even remember entire sonnets. But ask a person on the street about his life and you're unlikely to get much of an answer beyond the fact that he was born in Stratford-upon-Avon, and eventually moved to London to pursue his theatrical career. Even those who have devoted their lives to studying Shakespeare can not say for sure what he did during those years leading up to the performance of his first play, nor do they know much about his life beyond the theatre. We don't even know his date of birth. Many of the claims made about him are based on uncorroborated signatures in guest books and reports made years after his death.

But from the few precious documents we know to be authentic, there is much to be deduced. By combining our knowledge of the time with logic and reasoning, we can make some well-informed guesses about the life of the man who has come to define the English language. With over 400 years having passed since Shakespeare's death, we've pieced together the evidence to find out if there's any truth to the claims of adultery, heresy and fraud that have tarnished the reputation that we believed was untouchable.



THE SHAKESPEARES' FALL FROM GRACE

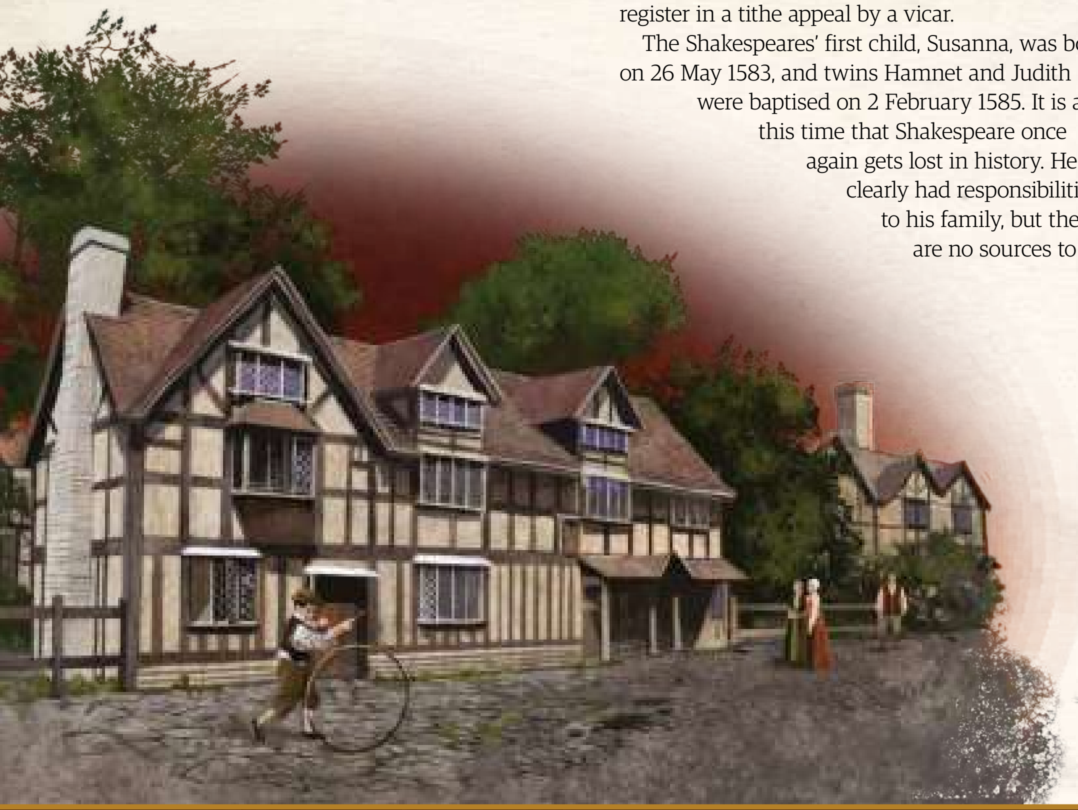
While we don't know the exact date of Shakespeare's birth, we do know he was born in Stratford-upon-Avon, England, and baptised there on 26 April 1564. His parents were John Shakespeare, a well-to-do glover and leather worker, and Mary Arden, the daughter of an affluent farmer. He was the third child of eight, and the eldest surviving son. Given his family's social standing, it's likely that William attended the local grammar, King's New School. Here he would have studied Latin and the works of classical authors. He left school at the age of 14, without going on to university as would have been expected. What he did for the next four years – now considered his 'First Lost Years' – we do not know.

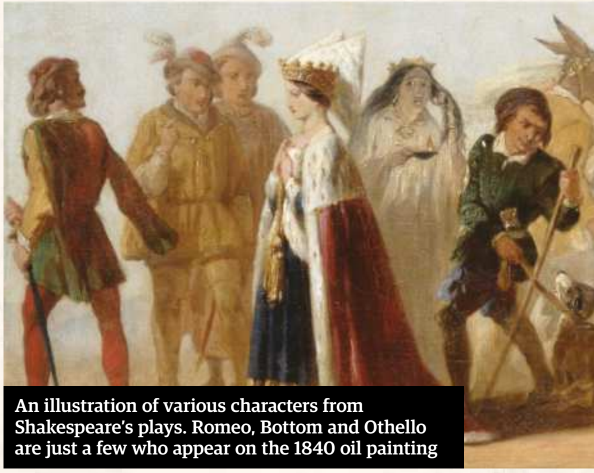
What we do know is that around the time of leaving school, Shakespeare's father had fallen on hard times. Prior to this, John had been successful in both his own enterprises and civic life. He had begun his municipal career in 1556 when he was elected borough ale taster, a job that undoubtedly would have made him the envy of the town, and was appointed high bailiff of Stratford, the modern-day equivalent of mayor, in 1568. However, by the late 1570s, he had stopped attending council meetings, and he was prosecuted for illegal dealing in wool and lending money with excess interest. This would likely have had a devastating effect on his finances. Might William have been forced to end his education prematurely in order to help support his family?

Many believe that Shakespeare was born on the same date he died, but this can be traced back to a mistake made by an 18th-century scholar

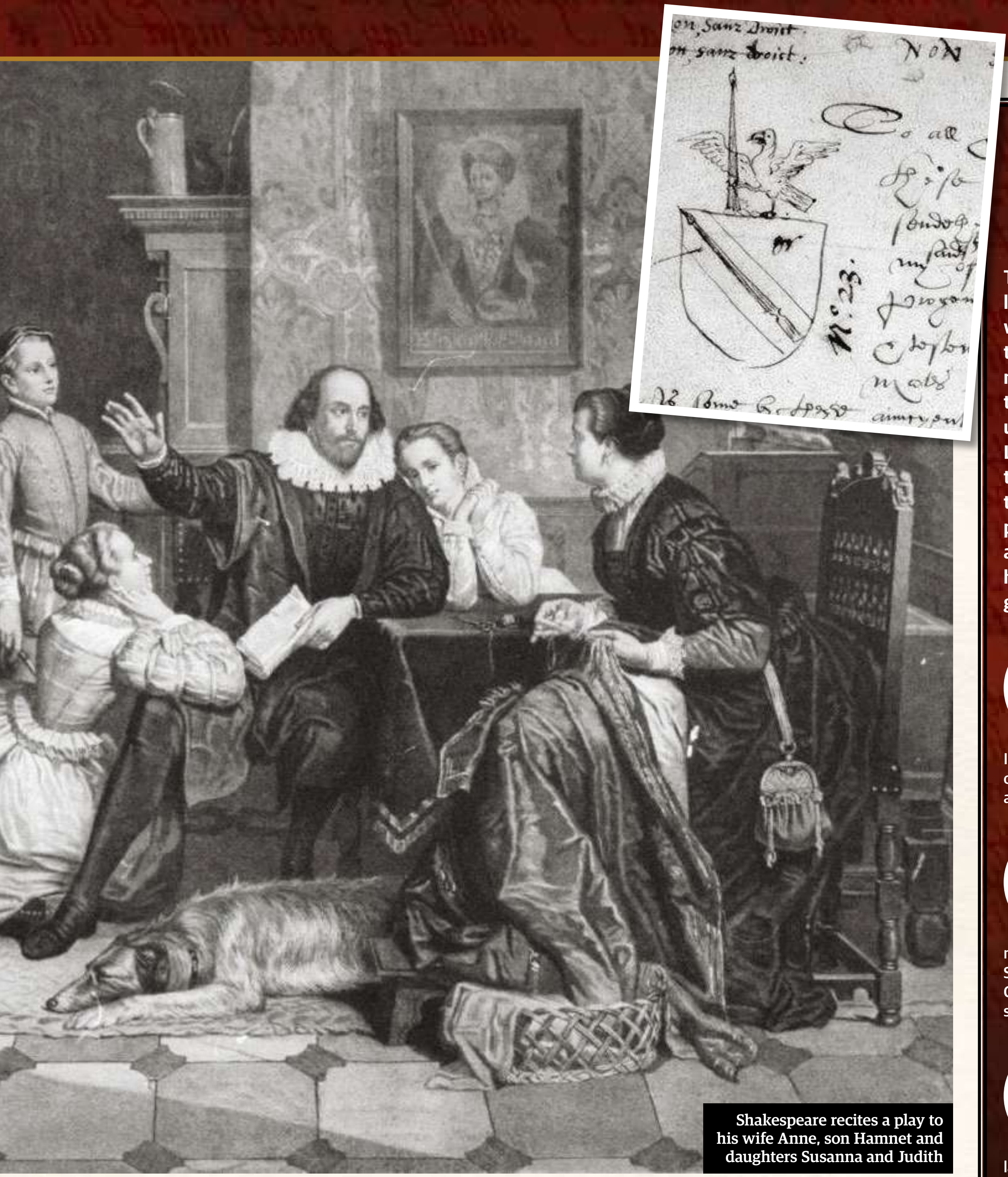
Whatever happened, on 28 November 1582, a marriage bond was granted to 'William Shagspere' and 'Anne Hathwey' of Stratford. Bizarrely, the previous day a marriage licence had been issued to 'Wm Shaxpere' and 'Anne Whateley'. Several conclusions have been drawn from this, the most eyebrow-raising being that Shakespeare was in love with one woman but obliged to marry another. It's true 26-year-old Anne Hathaway was three months pregnant with Shakespeare's child when they married, so could it have been that he was coerced into doing so? Other theories hold more weight, one being that Wm Shaxpere and Anne Whateley were completely different people, and another that this was simply the mistake of a careless clerk; the name 'Whateley' appears on the same page of the register in a tithe appeal by a vicar.

The Shakespeares' first child, Susanna, was born on 26 May 1583, and twins Hamnet and Judith were baptised on 2 February 1585. It is after this time that Shakespeare once again gets lost in history. He clearly had responsibilities to his family, but there are no sources to hint at what he was doing professionally. Politically, in 1586, the Catholic Mary Queen of Scots, cousin of Elizabeth I, was tried for treason and executed the following year, while in 1588 the Spanish Armada was defeated by the English. We know that Shakespeare was in Stratford in 1589 as he was involved in a legal dispute over some land. But at what point he began writing and left for London, we have no idea. All we know is that on 3 March 1592, Shakespeare's first recorded performance was made in London.





An illustration of various characters from Shakespeare's plays. Romeo, Bottom and Othello are just a few who appear on the 1840 oil painting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Shakespeare recites a play to his wife Anne, son Hamnet and daughters Susanna and Judith

SHAKESPEARE'S LOST YEARS THE THEORIES

There are two periods of Shakespeare's life for which we have no evidence of his whereabouts or pursuits. These include the time between him leaving school and marrying Anne Hathaway (1578-82), and the time after the birth of his children leading up to the first performance of *Henry VI* in London (1585-92). It is the Second Lost Years that intrigue historians the most, because this is the time when he would have been perfecting his craft and establishing himself as a dramatist. No one knows for sure what he was up to, but there have been plenty of guesses about where he was.

The pilgrim

A 16th-century guest book signed by pilgrims to Rome reveals three cryptic signatures thought to be Shakespeare's. This has led some to believe that he spent his lost years in Italy, perhaps to escape the persecution of Catholics. 14 of his plays are set there, so it may not be as outlandish a claim as it sounds.

The soldier

During Shakespeare's lost years, England was under constant threat from invasion by the Spanish Armada. A document from 1588 recounts a major recruitment campaign for militiamen in Stratford, leading to suggestions that Shakespeare may have been enticed into signing up. Could this be why he was able to create such vivid scenes of military life?

The poacher

The earliest and most common tale originated in 1616 from a Gloucestershire clergyman. He said that Shakespeare poached deer and rabbits on the property of local landowner Sir Thomas Lucy, who "had him oft whipped and sometimes imprisoned."

The servant

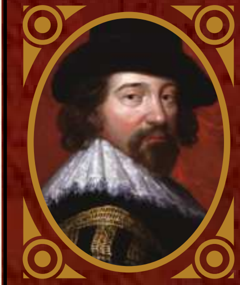
A reference to a 'William Shakeshafte' in the will of Alexander Hoghton, a wealthy Catholic, suggests that Shakespeare may have been a servant for his family in Lancashire. The will also mentioned costumes and musical instruments, supposedly further evidence that Shakeshafte was in fact Shakespeare.

The schoolmaster

17th-century gossip chronicler John Aubrey claimed that Shakespeare had been a teacher, basing this off verbal evidence from the son of one of Shakespeare's contemporaries. There is also evidence that the school in question was owned by Henry Wriothesley, Shakespeare's sponsor.

WAS SHAKESPEARE A FRAUD?

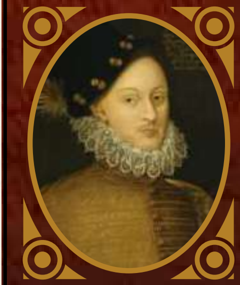
As is often the case with successful people, there have always been those who have sought to discredit Shakespeare with claims that he was purely a front for the plays' real author or authors, who for some reason did not want or could not accept public credit. Possible candidates for the real writer of Shakespeare's works include:



Sir Francis Bacon

1561-1626

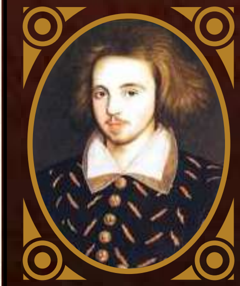
Lawyer, philosopher, essayist and scientist, parallels between Bacon's work and Shakespeare's have led some to argue that he hid messages of support for a republican society in plays co-authored with Shakespeare.



Edward de Vere

1550-1604

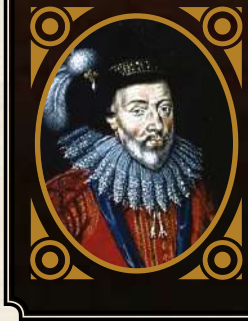
The 17th Earl of Oxford sponsored several companies of actors and was an important courtier poet. It's thought only a man with a knowledge of royal courts, Italy and law could have written plays as well-informed as the bard's – a man just like de Vere.



Christopher Marlowe

1564-93

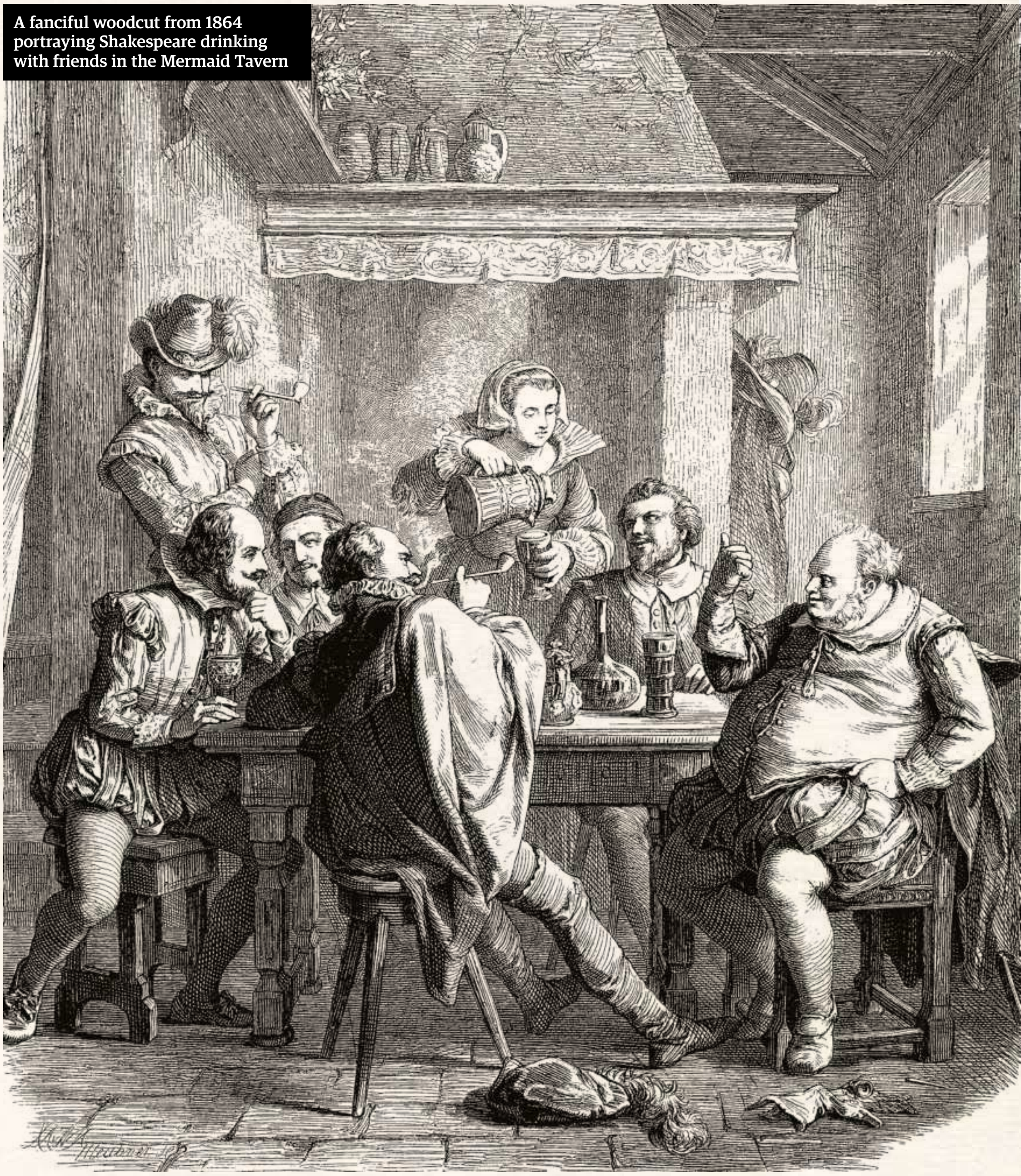
Perhaps the most outlandish theory is that Marlowe's death was faked to allow him to escape prosecution for atheism. Shakespeare was then chosen as the front behind whom Marlowe would continue writing his plays.



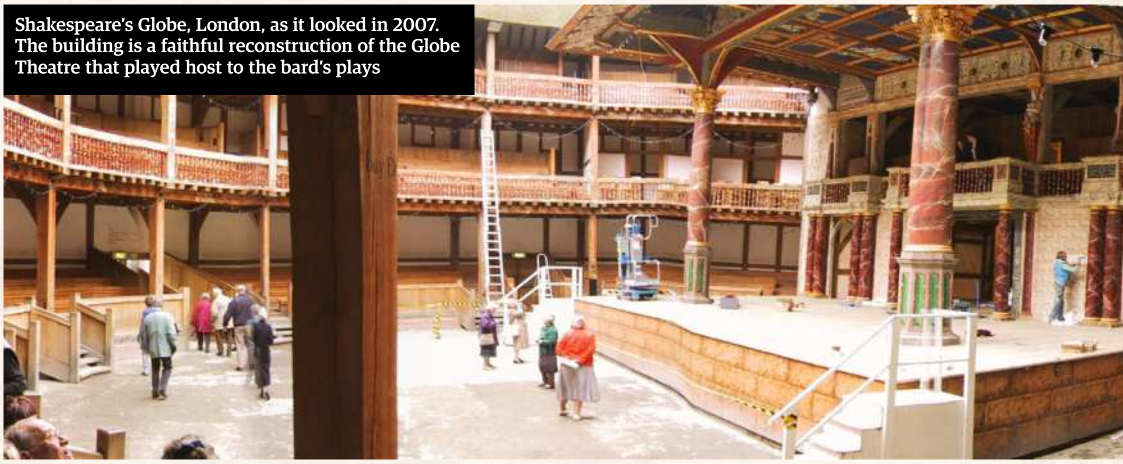
William Stanley

1561-1642

With the same initials as the bard, Stanley was reported by a spy to have been "busye in penning commodyes for the common players." He was also know to have travelled to Navarre, where *Love's Labours Lost* is set.



A fanciful woodcut from 1864 portraying Shakespeare drinking with friends in the Mermaid Tavern



Shakespeare's Globe, London, as it looked in 2007. The building is a faithful reconstruction of the Globe Theatre that played host to the bard's plays

LUST AND LOATHING IN THE CITY OF SIN

By the time of Shakespeare's first recorded performance at the Rose Theatre in London, the young bard was well established enough to have evoked criticism from other playwrights. One, Robert Greene, described him as an "upstart crow", accusing Shakespeare of reaching above his rank in trying to match university-educated writers like Christopher Marlowe and Ben Jonson. Philip Henslowe, the owner of the Rose, noted that Lord Strange's Men gave 15 performances of *Henry VI* and earned £3.16s.8d, making it extremely successful for its time. So we know in the years leading up to this, Shakespeare must have been busy perfecting his craft and building a reputation for himself.

However, in late 1592, the bubonic plague broke out in London. This spelled disaster for the city's theatres, many of which were forced to close completely until 1594 while the troupes toured the country to survive. After the death of Lord Strange in 1594, his players disbanded and reorganised into another troupe, under the patronage of the Lord Chamberlain. Shakespeare wrote for this company for most of his career, even acting in some secondary roles. They performed at The Theatre in Shoreditch, as well as at court for Queen Elizabeth I. *A Midsummer's Night Dream* may have been the first play Shakespeare wrote for the new company, which was followed over the next two years by a burst of creativity that spawned *Romeo And Juliet*, *Love's Labours Lost* and *The Merchant Of Venice*.

> Shakespeare's rival Ben Jonson is reported to have said that the upcoming poet and playwright "wanted art", ie lacked skill

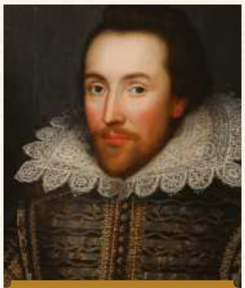
In 1596, Shakespeare's only son Hamnet died, possibly from the plague. He was 11 years old. Scholars have trawled for evidence to indicate that Shakespeare's work was in some way affected by his son's death; unlike his contemporary Ben Jonson, who published a poem called *On My First Sonne* when his own son died, Shakespeare's literary response - if there were one - was subtler. At the time, he was primarily writing comedies, and it wasn't until several years later that he turned his hand to tragedies. Many have suggested that Shakespeare's most famous tragedy *Hamlet*, which was written at the turn of the century, was inspired by Hamnet's death. Though the similarity between the two names is evidence enough for many people - Shakespeare even wrote his friend Hamnet Sadler's name as 'Hamlett' in his will - the prince of Denmark's name is most likely derived from the character of 'Amleth' in Saxo Grammaticus's *Vita Amlethi*, the Scandinavian legend upon which *Hamlet* is based.

This begs us to question what Shakespeare's relationship with his family was like. With his wife and children back in Stratford, he must have spent months at a time away from his family, leading to speculation that he had lovers in London. The subject matter of his plays certainly suggests that Shakespeare had a deep understanding of unrequited, forbidden and adulterous love. Was this something he had just observed, or something he had experienced? We know that he lived in Southwark from around 1599, close to the Globe Theatre, which had been built by the Lord Chamberlain's Men using timber from the old theatre. The area was known as 'Liberty of the Clink', and it lay outside the jurisdiction of the City of London. It had as many as 300 inns and brothels, attracting theatregoers and prostitutes from miles around. Shakespeare was surrounded by temptations - might he have given in to them?

One of the most infamous rumours surrounding the bard is that he had an illegitimate son with the wife of a tavern owner from Oxford. Shakespeare was known to have frequented the inn regularly while journeying between London and Stratford. In 1606, Jane Shepherd Davenant gave birth to a son, William, to whom Shakespeare was godfather. The boy went on to become a poet and playwright, and it was reported he "writ with the very spirit that did Shakespeare, and seemed contented enough to be thought his Son." He was also believed to have called his mother a "whore". There are even rumours surrounding Shakespeare of homosexuality, probably based on the fact that many of his love poems were dedicated to a young man known as the 'Fair Lord'. The most likely candidate is one of Shakespeare's patrons, but whether this was a romantic gesture or simply a mark of respect is up for debate.

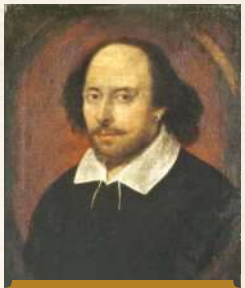
THE TRUE FACE OF SHAKESPEARE

Only two depictions of Shakespeare have been officially identified, both made posthumously. The credibility of others may never be known



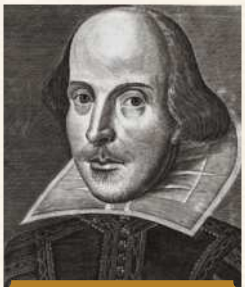
1610
THE COBBE PORTRAIT

Revealed to the public in 2009, the portrait descended into the Cobbe family with a portrait of Shakespeare's patron Henry Wriothesley – the person most likely to have commissioned a painting of him.



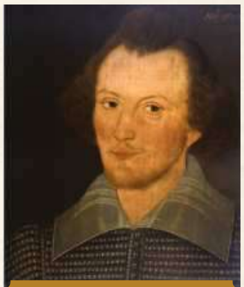
1600-10
THE CHANDOS PORTRAIT

This was believed to have been painted from life by John Taylor, Shakespeare's 'intimate friend', and was owned by his godson William Davenant before finding its way into the hands of the Duke of Chandos.



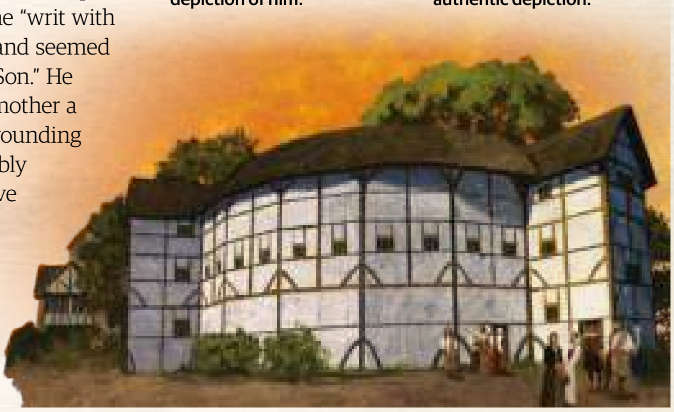
1623
THE DROESHOUT PORTRAIT

Martin Droeshout engraved this portrait of Shakespeare for the title page of the *First Folio*, a collection of the bard's plays published in 1623. It is the only work of art besides his funerary bust that is definitely identifiable as a depiction of him.



1603
THE SANDERS PORTRAIT

This has a label identifying it as Shakespeare and stating that it was painted in 1603. New scientific tests on the label and the oak panel suggest that it dates to this time, which if true, would make this likely to be an authentic depiction.



THE YEAR 1616

William Shakespeare died in 1616 with very little in the way of public mourning. It was a dark year for the theatre, with a lot of famous deaths.

Philip Henslowe dies

Henslowe's financial diary tells us much of what we know about early modern theatre practice. As a theatre entrepreneur, he built the Rose and Fortune playhouses and commissioned more than 300 plays. His son-in-law, Edward Alleyn, was the founder of Dulwich College.

Francis Beaumont dies

Beaumont's plays, mostly written in collaboration with John Fletcher, were hugely successful. Their working relationship reportedly extended to living arrangements and beyond, with "one Wench in the house between them [and] the same cloathes and cloak."

Miguel de Cervantes dies

Dying the day before Shakespeare, Spanish novelist and playwright Cervantes is best known for his *Don Quixote*, widely regarded as the world's first modern novel. His works captured the imagination of several English playwrights, including Shakespeare's now lost play, *Cardenio*.

SHAKESPEARE THE HERETIC?

How evidence has indicated that the bard was a secret Catholic

When Henry VIII broke from Rome, practising Catholicism became a crime punishable by death. This was briefly reversed when Mary I, the Catholic daughter of Catherine of Aragon, came to the throne, but after her death, Elizabeth I reinstated Protestantism as the state religion. Initially Catholics were tolerated, but after a Papal Bull declared her a usurper, Elizabeth came to see the Pope's followers as a major threat to the throne. Catholicism once again became equivalent to treason.

Though the direct evidence indicates that Shakespeare was a member of the Anglican Church, some scholars have claimed that Shakespeare's family had Catholic sympathies and that he himself was a secret Catholic. The strongest piece of evidence is a tract found in the rafters of the Shakespeares' old house believed to have been signed by John Shakespeare, in which he professes secret Catholicism (although this document has since been lost). Shakespeare's mother Mary was also believed to have been from a conspicuous Catholic family. Four of the six schoolmasters at the grammar school he attended were Catholic sympathisers and one of them later became a Jesuit priest.

This, along with the evidence that Shakespeare worked as a servant in a Catholic family and travelled to Italy on pilgrimage, all suggest that Shakespeare was indeed a heretic. Because of this, some have chosen to believe that his plays have hidden messages, using words like 'high' and 'light' when referring to Catholicism and 'low' and 'dark' when alluding to Protestantism. The truth, it seems, went with him to the grave.

Romeo + Juliet was released in 1996 and remains a popular modern adaptation of the classic tragedy

THE EDITED WILL & AN UNEXPLAINED DEATH

By the early 1600s, Shakespeare was a wealthy man. He was a shareholder in the Lord Chamberlain's Men and owned a 12.5 per cent stake in the Globe. He also invested in property in both London and Stratford, buying the second biggest house in the town along with 107 acres of farmland and a cottage.

After the death of Queen Elizabeth, Shakespeare's company was awarded a royal patent by King James I (VI of Scotland) and the troupe became the King's Men. It was at this time that he wrote *King Lear*, taking the theme of divided kingdoms to mirror James's new domain, along with *Macbeth* which was probably written to honour the new king's Scottish ancestry.

Shakespeare was still working in London as an actor in 1608, and in 1609 he published 154 sonnets. It may have been the return of the plague later this year that made him retire to Stratford around this time.

After 1610, he wrote fewer plays, and his last three were collaborations, probably with John Fletcher, who succeeded him as the house playwright of the King's Men.

Shakespeare died on 23 April 1616, aged 52, less than a month after signing his will. In it, he described himself as being in 'perfect health', leading to speculation that his death was sudden and unexpected. Half a century later, the vicar of Stratford John Ward wrote: "Shakespeare, Drayton and Ben Jonson had a merry meeting and, it seems, drank too hard, for Shakespeare died of

William Shakespeare dies

In stark contrast to the gushing eulogies written for Richard Burbage, the principal actor of Shakespeare's company who died three years later, no such words of praise were recorded for the playwright himself. 400 years later, the reception may be quite different…

Ben Jonson's Folio is published

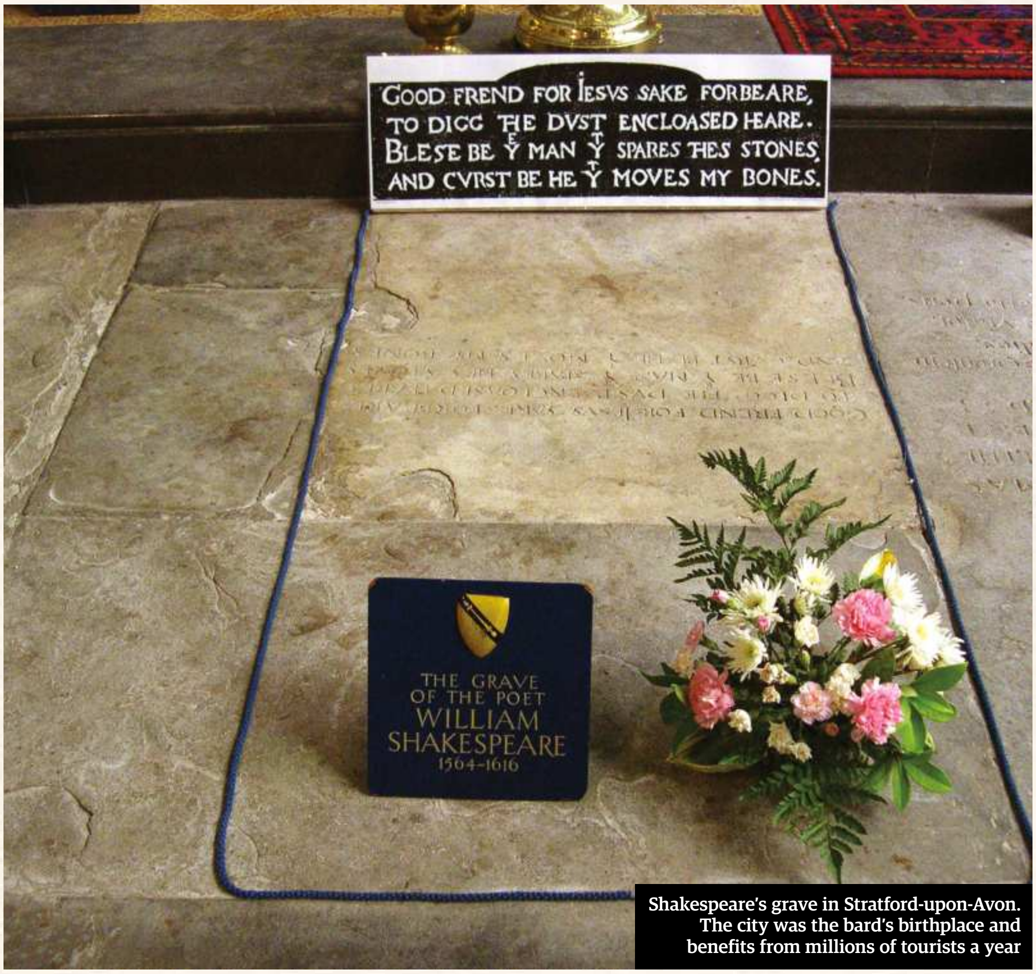
The Works Of Benjamin Jonson was the first collected folio edition of plays and poems published by any playwright. Jonson carefully cultivated his own legacy, with each page of the Works including lengthy explanatory footnotes.

Tang Xianzu dies

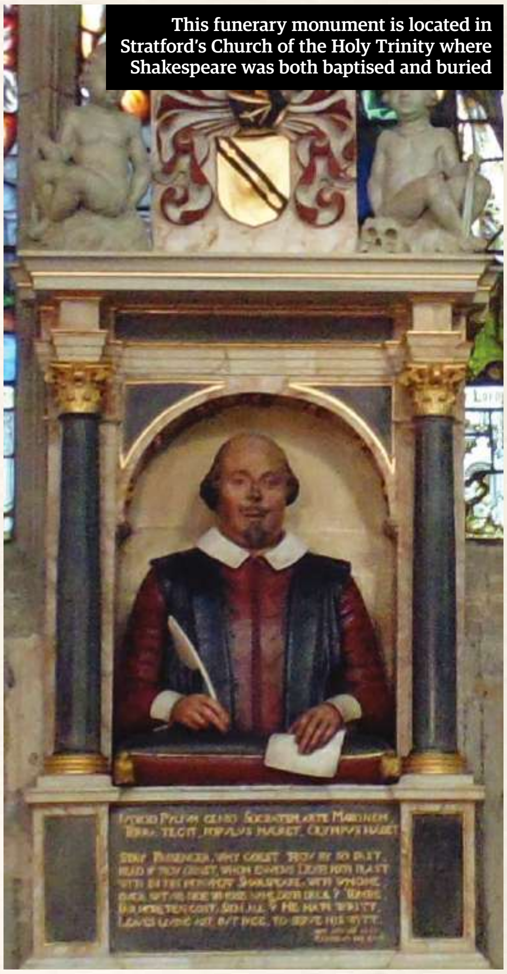
This Chinese playwright of the Ming dynasty was writing in a period that has come to be known as the second golden age of Chinese theatre. With an emphasis on musicality and song, many of his plays are still being performed on the Kun opera stage today.

The second version of Doctor Faustus is published

Christopher Marlowe's play about a scholar who sells his soul to the devil is famous. Lesser known is the fact it exists in two different versions. The 1616 text is longer, and probably amended by other playwrights including Samuel Rowley.


GOOD FREND FOR IESVS SAKE FORBEARE,
TO DIGG THE DVST ENCLOASED HEARE.
BLESE BE Y^E MAN Y^T SPARES THES STONES,
AND CVRST BE HE Y^T MOVES MY BONES.
THE GRAVE OF THE POET
WILLIAM SHAKESPEARE
1564–1616

Shakespeare's grave in Stratford-upon-Avon. The city was the bard's birthplace and benefits from millions of tourists a year



This funerary monument is located in Stratford's Church of the Holy Trinity where Shakespeare was both baptised and buried

a fever there contracted." This would correspond with responses from contemporary writers, one of whom wrote: "We wondered, Shakespeare, that thou went'st so soon/From the world's stage to the grave's tiring room."

He was survived by his wife and two daughters, and left most of his estate to Susanna, stipulating it should pass immediately to her first-born son. There is hardly any mention of Anne in his will, who would automatically have been entitled to a third of his estate, except to state that she should receive his "second best bed". Some people see this as an insult, and further evidence that their relationship was tepid at best, while others argue that this would most likely have been the matrimonial bed (the best bed reserved for guests), so a gesture of love.

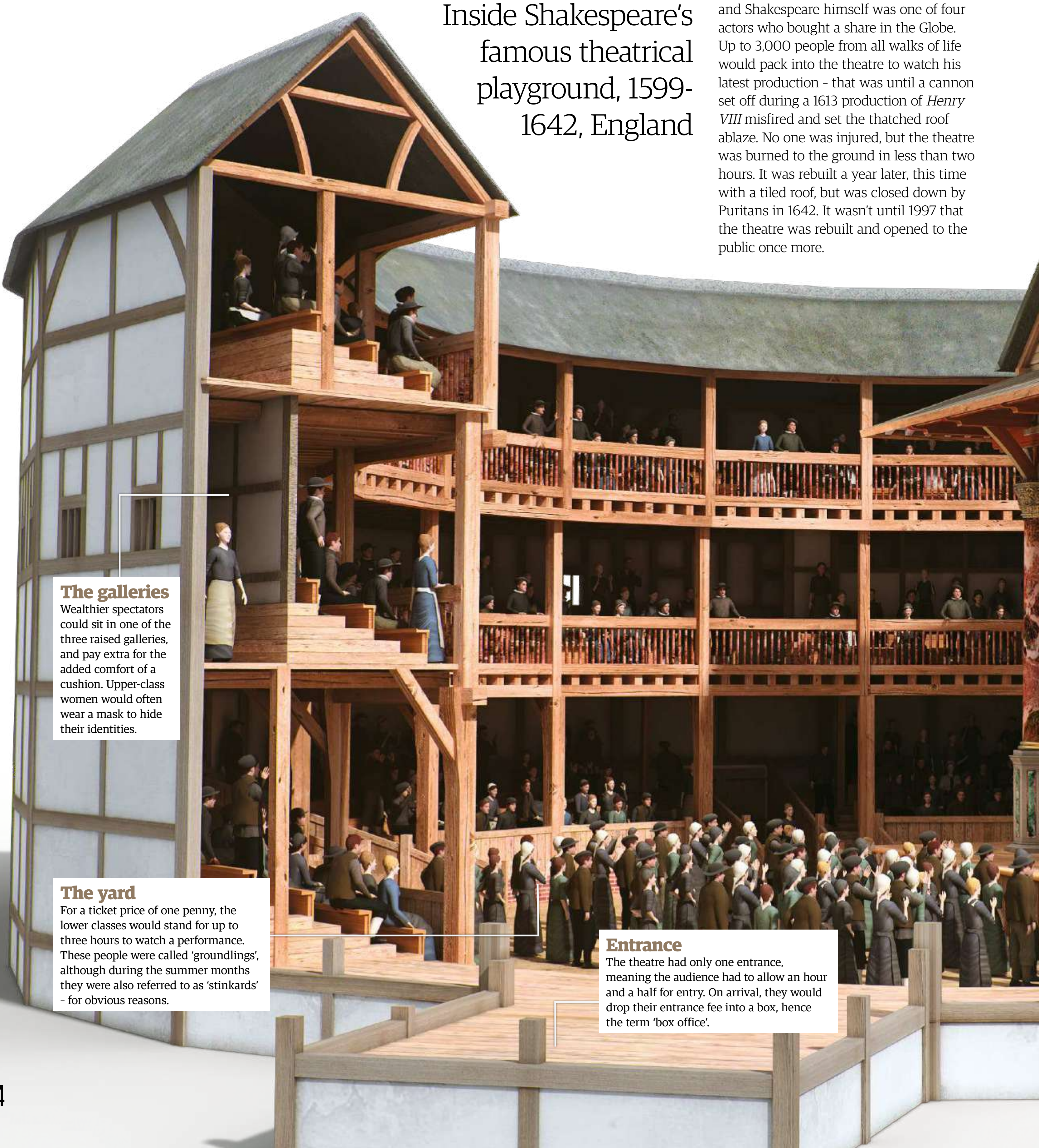
On 25 March, Shakespeare had edited the will, following the revelation that his daughter Judith's husband Thomas Quiney had an illegitimate son with a woman called Margaret Wheeler, who died in childbirth in mid-March 1616. Thomas was ordered by the church court to do public penance, which would have caused much shame and embarrassment for the Shakespeare family. In the first bequest of the will there had been a provision "vnto my sonne in L[aw]"; but "sonne in L[aw]" was then struck out, with Judith's name in its place.

Shakespeare was buried in the chancel of the Holy Trinity Church in Stratford two days after his death, and some years later, a funerary monument was erected in his memory. In August 1623, Anne followed him to the grave. Later that year, the *First Folio* was published containing 36 of his plays, and though about 18 had been published prior to that, this was arguably the only reliable version. In its preface, Ben Jonson wrote: "He was not of an age, but for all time." Even then people were aware of the timelessness of Shakespeare's plays, and they continue to resonate with audiences around the world. They have been adapted for film and television, along with theatrical adaptations like those produced by the Reduced Shakespeare Company, who can perform all 37 of his plays in just 97 minutes. Shakespeare is also believed to have influenced the English language more than any other writer, coining – or at least popularising – terms and phrases that are still used in everyday conversation. His life may remain a mystery, but perhaps that is part of what makes his works as ethereally beautiful as we see them today.

The Globe

Inside Shakespeare's famous theatrical playground, 1599-1642, England

One of the first purpose-built theatres in London, this open-air building is best known for its links with the most famous playwright in history, William Shakespeare. Its construction was funded by his playing company, the Lord Chamberlain's Men, and Shakespeare himself was one of four actors who bought a share in the Globe. Up to 3,000 people from all walks of life would pack into the theatre to watch his latest production – that was until a cannon set off during a 1613 production of *Henry VIII* misfired and set the thatched roof ablaze. No one was injured, but the theatre was burned to the ground in less than two hours. It was rebuilt a year later, this time with a tiled roof, but was closed down by Puritans in 1642. It wasn't until 1997 that the theatre was rebuilt and opened to the public once more.



The galleries
Wealthier spectators could sit in one of the three raised galleries, and pay extra for the added comfort of a cushion. Upper-class women would often wear a mask to hide their identities.

The yard
For a ticket price of one penny, the lower classes would stand for up to three hours to watch a performance. These people were called 'groundlings', although during the summer months they were also referred to as 'stinkards' – for obvious reasons.

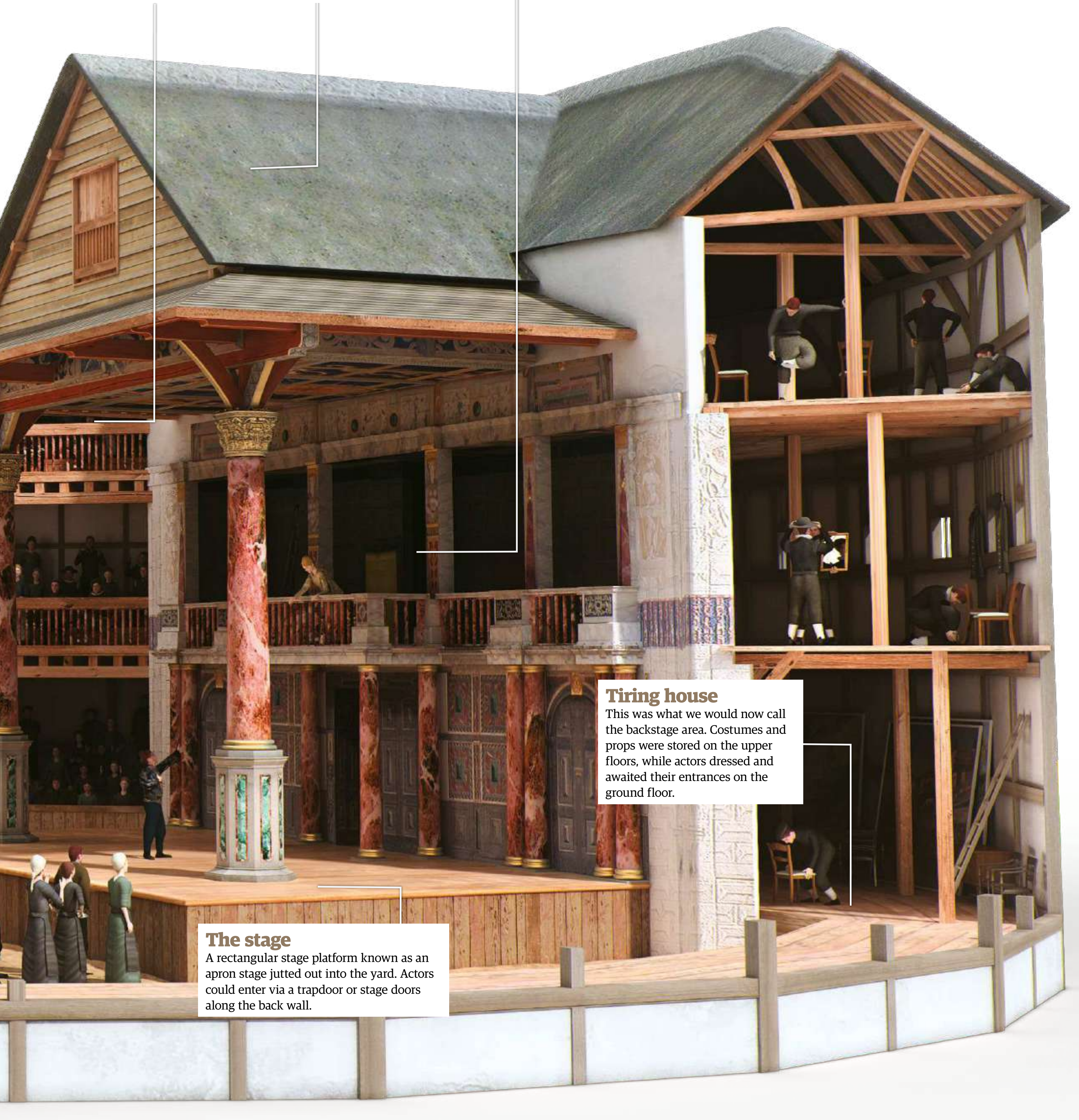
Entrance
The theatre had only one entrance, meaning the audience had to allow an hour and a half for entry. On arrival, they would drop their entrance fee into a box, hence the term 'box office'.

The heavens
The ceiling under the stage roof was known as the 'heavens', and would have been painted to look like a sky. A trap door in the ceiling allowed actors to drop down onto the stage using a rope.

Roof
The original Globe had a thatched roof that covered the gallery areas and stage, protecting the actors and wealthier spectators from the elements. After a fire destroyed the theatre, it was rebuilt with a less flammable tiled roof.

Balcony
This was where the musicians performed. It could also be used for scenes performed over two levels, such as the balcony scene in *Romeo And Juliet*.

> "Up to 3,000 people from all walks of life would pack into the theatre"



Tiring house
This was what we would now call the backstage area. Costumes and props were stored on the upper floors, while actors dressed and awaited their entrances on the ground floor.

The stage
A rectangular stage platform known as an apron stage jutted out into the yard. Actors could enter via a trapdoor or stage doors along the back wall.

© Sol 90 Images

Johannes Kepler

1571-1630

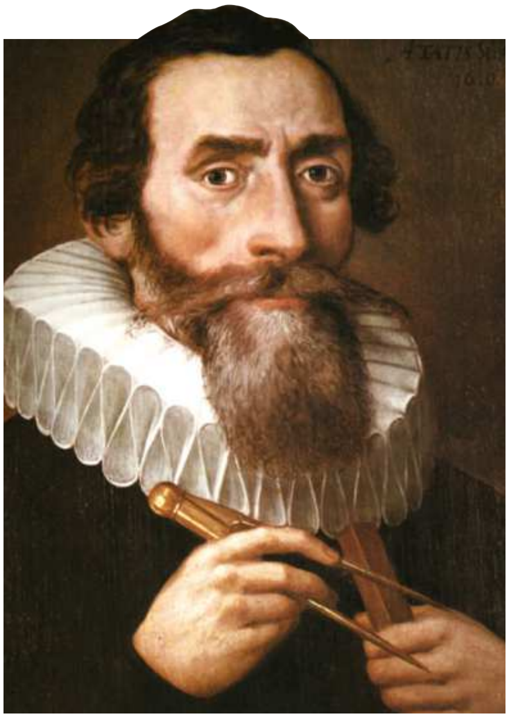
Often overshadowed by Galileo, Kepler was one of the most important figures in the fields of astronomy and physics

Johannes Kepler was a German mathematician and astronomer who, despite being less well known than scientists such as Galileo, played a pivotal role in the founding of modern astronomy.

Today, Kepler is best remembered for his three laws of planetary motion (see 'The big idea' boxout), as well as his seminal texts on the orbit of Mars, the shape and formation of planets and the ratification of a Sun-centred model of the Solar System - first posited by Renaissance astronomer Nicolaus Copernicus.

Kepler was born on 27 December 1571 in the free imperial city of Weil der Stadt, near to modern-day Stuttgart. One of his first encounters with astronomy came when he was six, observing the Great Comet of 1577. This was followed three years on with a lunar eclipse, which he later recalled greatly inspired him.

Kepler stayed in touch with astronomy throughout his schooling, retaining his interest during his time at the University of Tübingen. It was at Tübingen where his superb mathematical abilities became evident and he soon gained a reputation as a skilful astronomer and astrologer (in this era, these disciplines were considered the same thing).



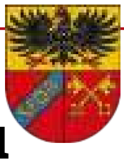
Around this time he gained a mentor - Michael Maestlin - and began learning both the Ptolemaic system of planetary motion (which was Earth centred) and also the Copernican system, which was new and revolutionary and controversially placed the Sun at the heart of our Solar System.

At the age of 23, Kepler started teaching mathematics and astronomy at the University of Graz. It was during his time here that he published the first defence of the Copernican system, his *Mysterium Cosmographicum*. The text was not widely read, but it firmly established Kepler as one of the foremost astronomers of the age, as it largely modernised and honed Copernicus's theories.

In 1600, Kepler met someone who would become a key colleague in the formulation of his three laws: Danish nobleman Tycho Brahe, who was building a new observatory. Here he

A LIFE'S WORK

A journey through the big moments in Kepler's life



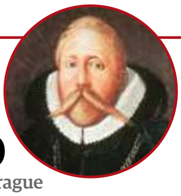
1571
Johannes Kepler is born on 27 December in Weil der Stadt, Württemberg, south-west Germany.

1577
Although a sickly child, viewing the Great Comet of 1577 is a turning point that will inspire his career.

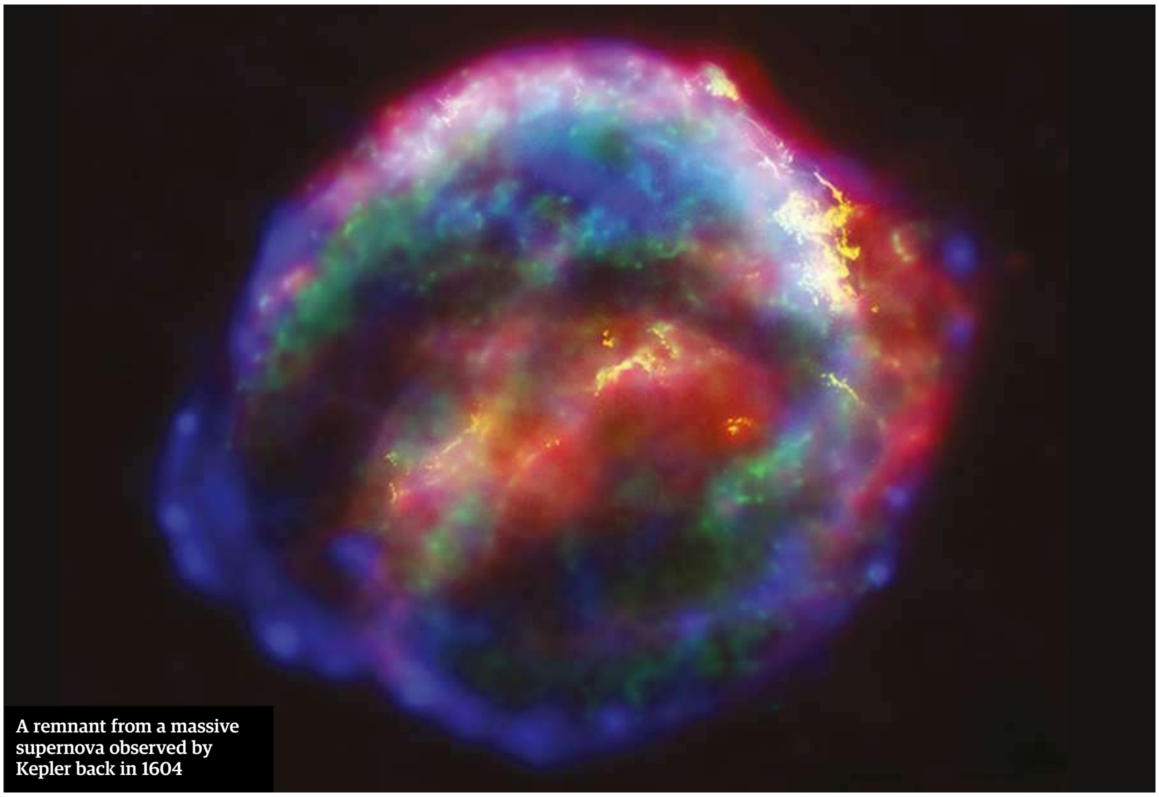
1589
At 18 he enrols at the University of Tübingen's stift (the theological seminary).

1594
He starts teaching mathematics at the University of Graz but is dismissed in 1600.

1596
Publishes *Mysterium Cosmographicum*, developing the Copernican theory of heliocentrism.



1600
Moves to Prague to work with Danish astronomer Tycho Brahe, who dies the following year.

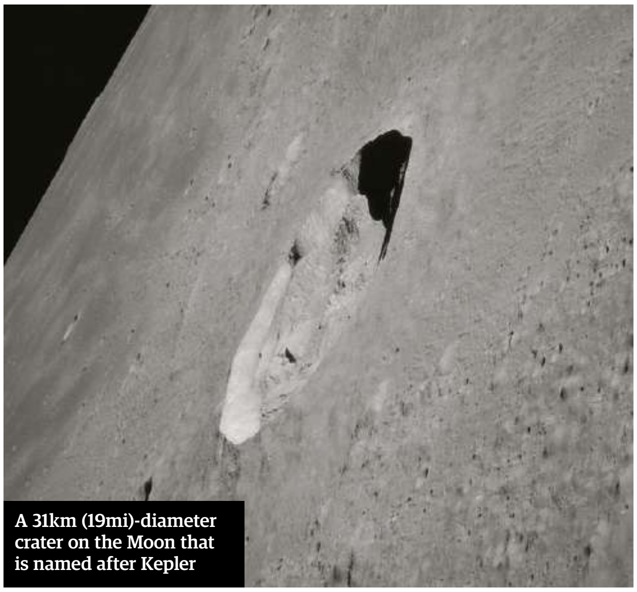


A remnant from a massive supernova observed by Kepler back in 1604

wished to utilise Brahe's extensive observations of Mars to run a test to back up his evolution of the Sun-centred Copernican system. Following Brahe's untimely death in 1601, he succeeded him in becoming imperial mathematician to Emperor Rudolf II, a time in which he published works on optics and techniques for observing stars and planets, as well as his landmark 1609 text *A New Astronomy*, in which he introduced the first two of his three laws of planetary motion.

After the death of the emperor in 1612, Kepler moved to Linz. It was here, seven years later, that he published *Harmonices Mundi*, a text that while filled with much erroneous material as determined by modern science, did include his third and final law of planetary motion. He later completed a comprehensive star catalogue and planetary table started with Brahe in 1600.

Kepler died on 15 November 1630 in Regensburg, Germany. Despite his impressive work, his three laws were not immediately accepted by the astronomical community, with notable figures such as Galileo and René Descartes ignoring them. It was not until the late-17th century that astronomers like Isaac Newton started to adopt them.



A 31km (19mi)-diameter crater on the Moon that is named after Kepler

> "Kepler is best remembered for his three laws of planetary motion and texts on the ratification of a Sun-centred Solar System"

Top 5 facts: Johannes Kepler

1 Family

Johannes Kepler and his first wife, Barbara Müller, had five children in total. However, the first two – named Heinrich and Susanna – both died in infancy. The following three survived. He married a second time in 1613.

2 Banishment

Kepler's belief in a Sun-centred Solar System – along with his deep-rooted Protestantism – saw him banished from the Austrian, heavily Catholic city of Graz in August 1600.

3 Supernova

Kepler was the first astronomer to observe the SN 1604 star go supernova in October 1604. Two years later he described it in detail in his text De Stella Nova.

4 Rejection

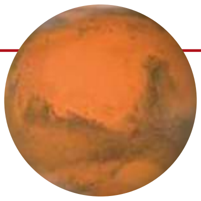
When Kepler published two of his three laws of planetary motion in his groundbreaking work *Astronomia Nova* at first he was ridiculed and ignored by the majority of the scientific establishment, including Galileo Galilei.

5 Mountains

In New Zealand's Fiordland National Park there's a mountain range named after Kepler in tribute to his extensive contributions to the field of astronomy.

1601
Kepler is appointed Emperor Rudolf II's imperial mathematician in Brahe's stead.

1609
Two of Kepler's three laws of planetary motion are published in *Astronomia Nova*, based largely on the movements of Mars.



1611
In the wake of Galileo's success, Kepler puts forward a new design for a telescope with two convex lenses.

1612
Kepler returns to his hometown to defend his mother, a healer, against charges of witchcraft.

1621
Publishes *Epitome Astronomiae*, which is a compilation of all his other work on heliocentrism.

1624
As per Brahe's dying wish, Kepler completes an astronomical table that is far more accurate than previous models.

1630
Johannes Kepler dies in Regensburg on the way to collect a debt, aged 58.

© NASA; SPL

Caravaggio

1571-1610

Rogue, murderer, legend: The scandalous story of the killer artist that painted Rome red

“A stocky young man… with a thin black beard, thick eyebrows and black eyes who goes dressed all in black… in a rather disorderly fashion.” This is one of the only known descriptions of a man called Michelangelo Merisi. Few people recognised his name, but most would pull their children closer and cross the road if they saw the swish of his caped silhouette cut through the gloom of Rome’s backstreets.

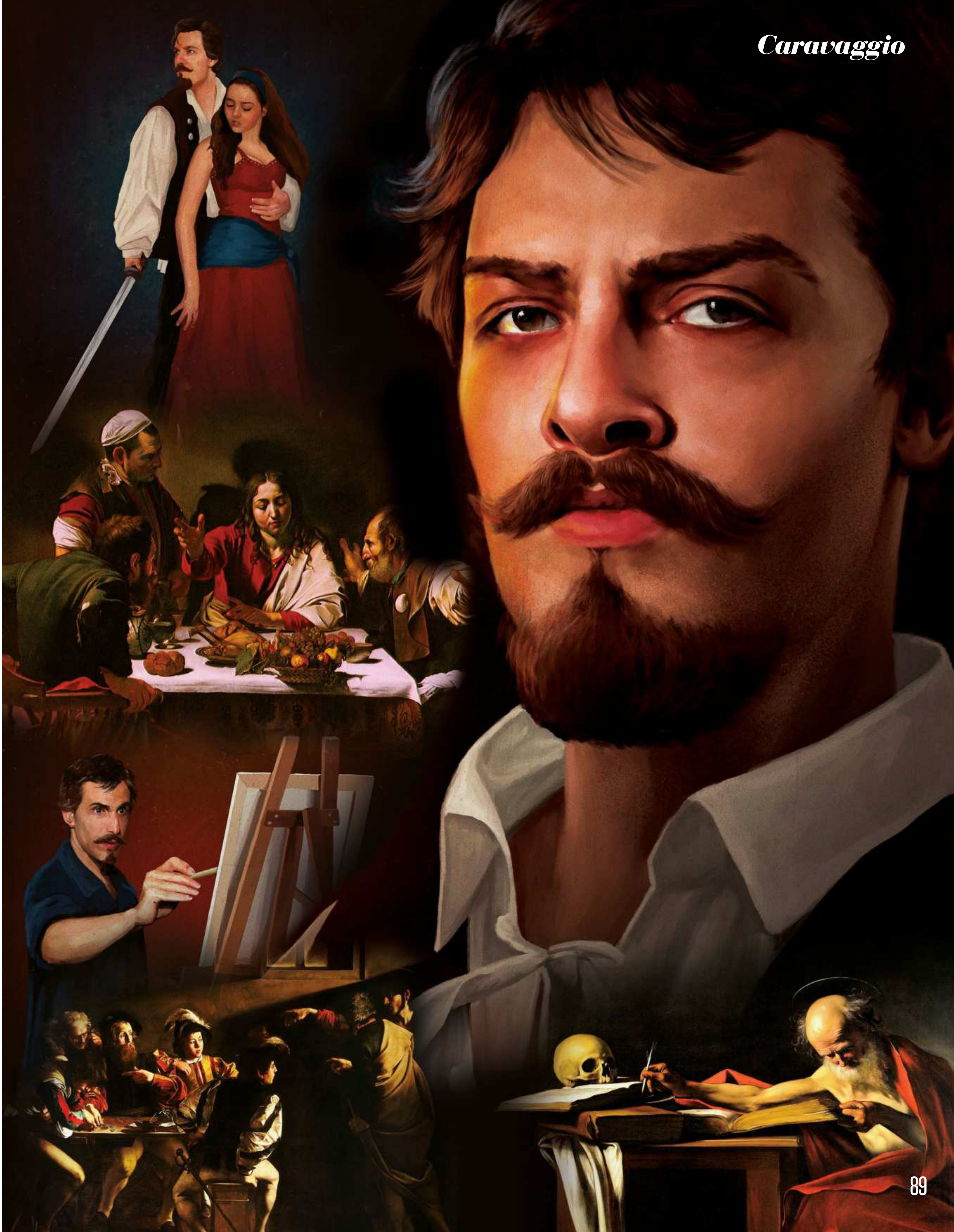
The dark description matches a dark life: a thug, a brawler, and frequently locked up for lewd behaviour and illicit activity. Challenge him in the shadows and you may live to regret it, but pause to view him in the light and you will leave astonished. By day, this man painted some of the world’s most glorious masterpieces. Towering canvasses of breathtakingly detailed scenes, exultantly displayed above altars and splashed across the walls of Rome’s elite.

Michelangelo Merisi may exist in history with relative anonymity, but the master behind the name is Caravaggio – one of the art world’s most celebrated baroque painters. His life, much like his work, shows a bizarre roller-coaster ride from dark to light and back again, as incredible talent existed hand-in-hand with a reputation as a vengeful and unpredictable scoundrel.

16th-century Rome was full to bursting with soldiers, beggars, priests and whores. Yet, in 1592, when 21-year-old Caravaggio made his way to the Eternal City, the depraved core of the Roman metropolis was being steadily coated with shiny Catholic gloss by Pope Clement VIII. Artists were in high demand, and this was the city that would both make and break the young painter. In a style that was to colour his entire life, Caravaggio showed up in Rome alone and on the run, potentially dodging his first murder charge.

Born in September 1571 to an artisan stonemason, the young Michelangelo Merisi grew up in a small town near Milan called Caravaggio – the name he would later adopt as his own. He lost his father and grandfather to bubonic plague at a young age, and so with no male role model to act as a moral compass, the adolescent Caravaggio was seduced by Milan’s shady underworld. Armed with quick wit and a sharp temper, he let the current of

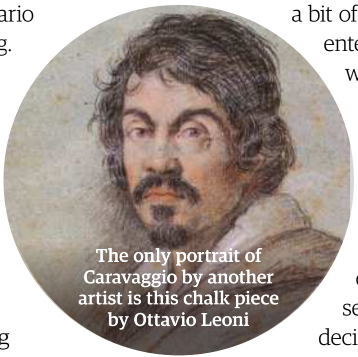
© Kevin McGivern



general skulduggery carry him until he had sunken so deep that he had to run to Rome for his life.

Not content with painting just fruit and flowers in the studio of his master, Caravaggio began working on his own paintings. Before he began to paint the scenes from the Bible for which he is so renowned, Caravaggio painted ordinary people and *Boy With A Basket Of Fruit* was one of his earliest works. The boy in the painting is fresh-faced and pretty, with an easy attitude and an alluring air. It's thought that Caravaggio used his fellow artist and friend Mario Minniti as a model for this painting. His suggestive expression and come-to-bed eyes have led many to assume that the pair's relationship extended past the camaraderie of disgruntled painters' apprentices. In his short life, Caravaggio never married, but he most certainly enjoyed the company of both men and women - in a city so brimming with prostitutes and purveyors of the flesh, who could resist?

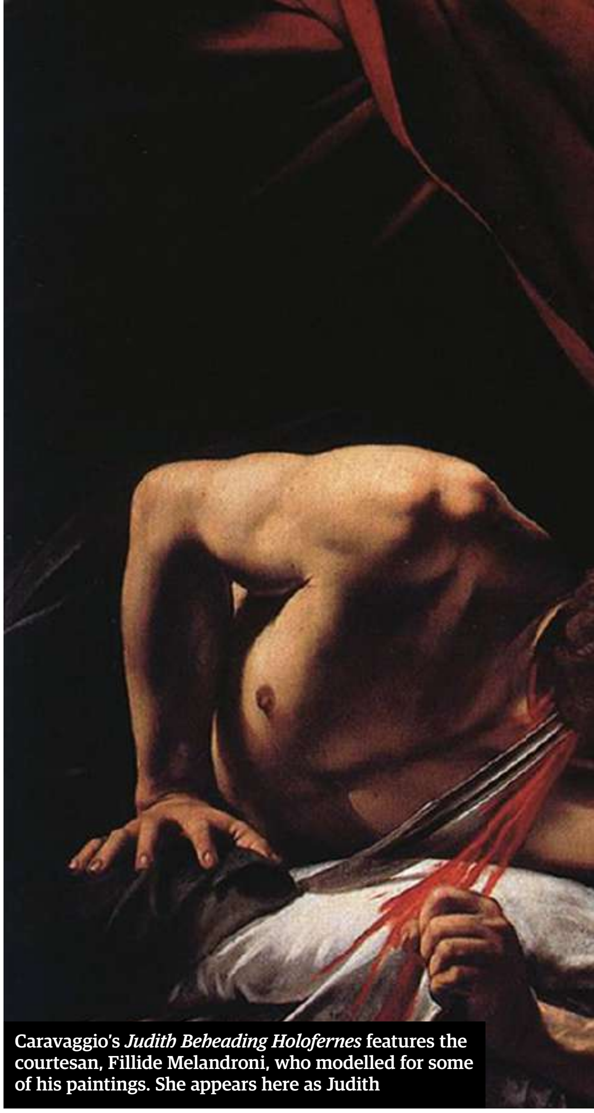
In 1595, Caravaggio got his first 'big break' in the form of the patronage from Cardinal Francesco Maria Bourbon del Monte. He was an art lover and a collector, and helped to secure Caravaggio's first commission for Christian artwork, paintings for San Luigi dei Francesi, the Church of the French in Rome. It was also purported that del Monte was a keen indulger in the company of men, and that in offering the young painter lodging and work, there was a more lustful purpose beside his admirations of Caravaggio's professional talents. Of course such a scandal is just speculation, no evidence exists as proof either way.



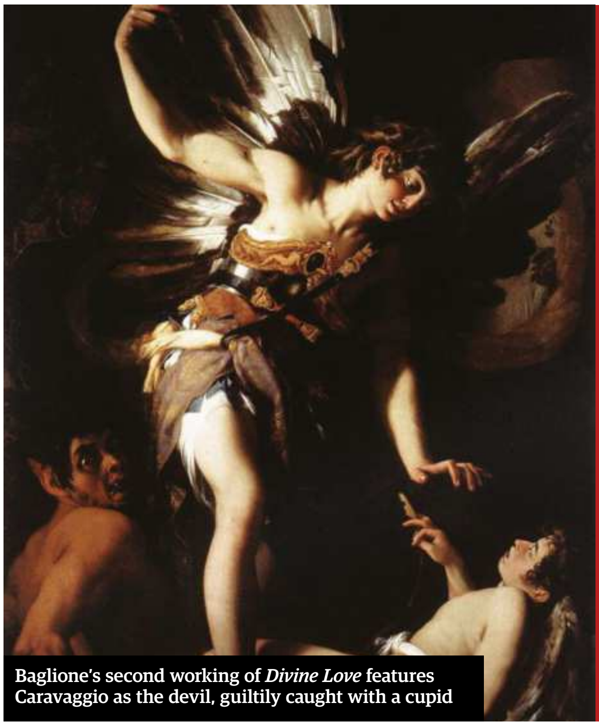
The only portrait of Caravaggio by another artist is this chalk piece by Ottavio Leoni

As Caravaggio painted and whored his way around Rome, his personal life was almost as dark as the shades he mixed for his canvasses. In a society where honour was everything and reputation was a matter of life and death, the members of the artistic community were volatile, thought to be driven crazy by their potent painting materials. Stories of sabotage penetrated artistic circles, and instances of badmouthing other artists were taken very seriously. Caravaggio, being an adamant and ambitious personality as well as a bit of a hot-head, was never afraid to enter the fray, letting his rivals know what he thought of them and (sometimes very literally) tearing a strip out of anyone who dared do the same to him. Where some scores were settled with violent trysts in the street (Caravaggio once ambushed and stabbed a critic in the back), others were settled on canvas, as Caravaggio decided to outdo his rivals in paint.

By 1598, Caravaggio had made a name for himself in the artistic community and as a swaggering miscreant on the streets of Rome. He was known to cavort around with a rowdy bunch of other artists who all lived by the motto 'nec spe, nec metu' - without hope, without fear. Caravaggio and his cronies were known to dress pompously, like knights and noblemen, and cruise the piazzas by day, start fights and frequent the whorehouses by night, then pick more fights before picking up a woman. Caravaggio often used his prostitutes as models, painting their likeness in exchange for other favours. The dark-haired beauty Fillide Melandroni became his favourite, taking a leading role in at least three of his paintings. Perhaps it was



Caravaggio's *Judith Beheading Holofernes* features the courtesan, Fillide Melandroni, who modelled for some of his paintings. She appears here as Judith



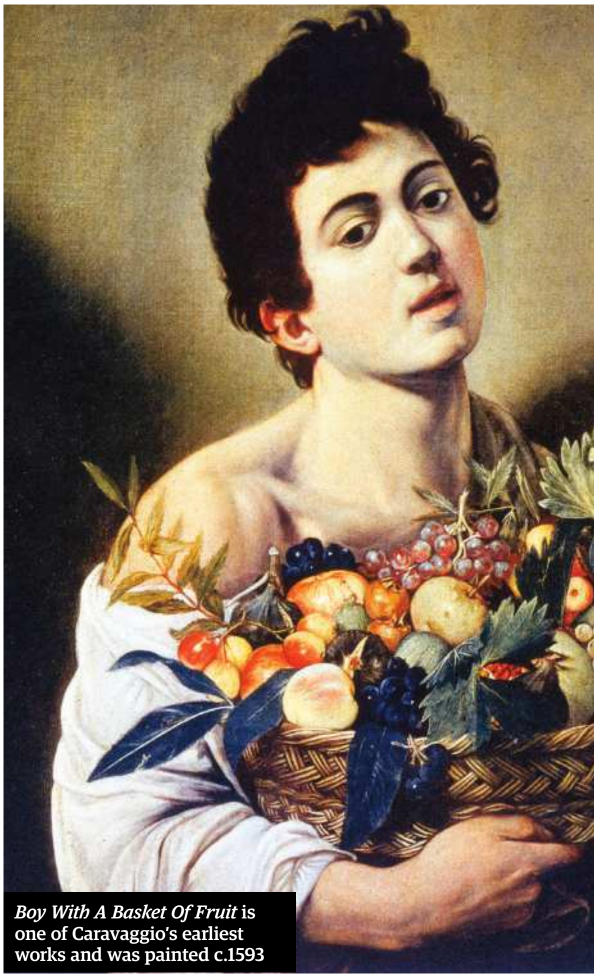
Baglione's second working of *Divine Love* features Caravaggio as the devil, guiltily caught with a cupid

Rivals in paint

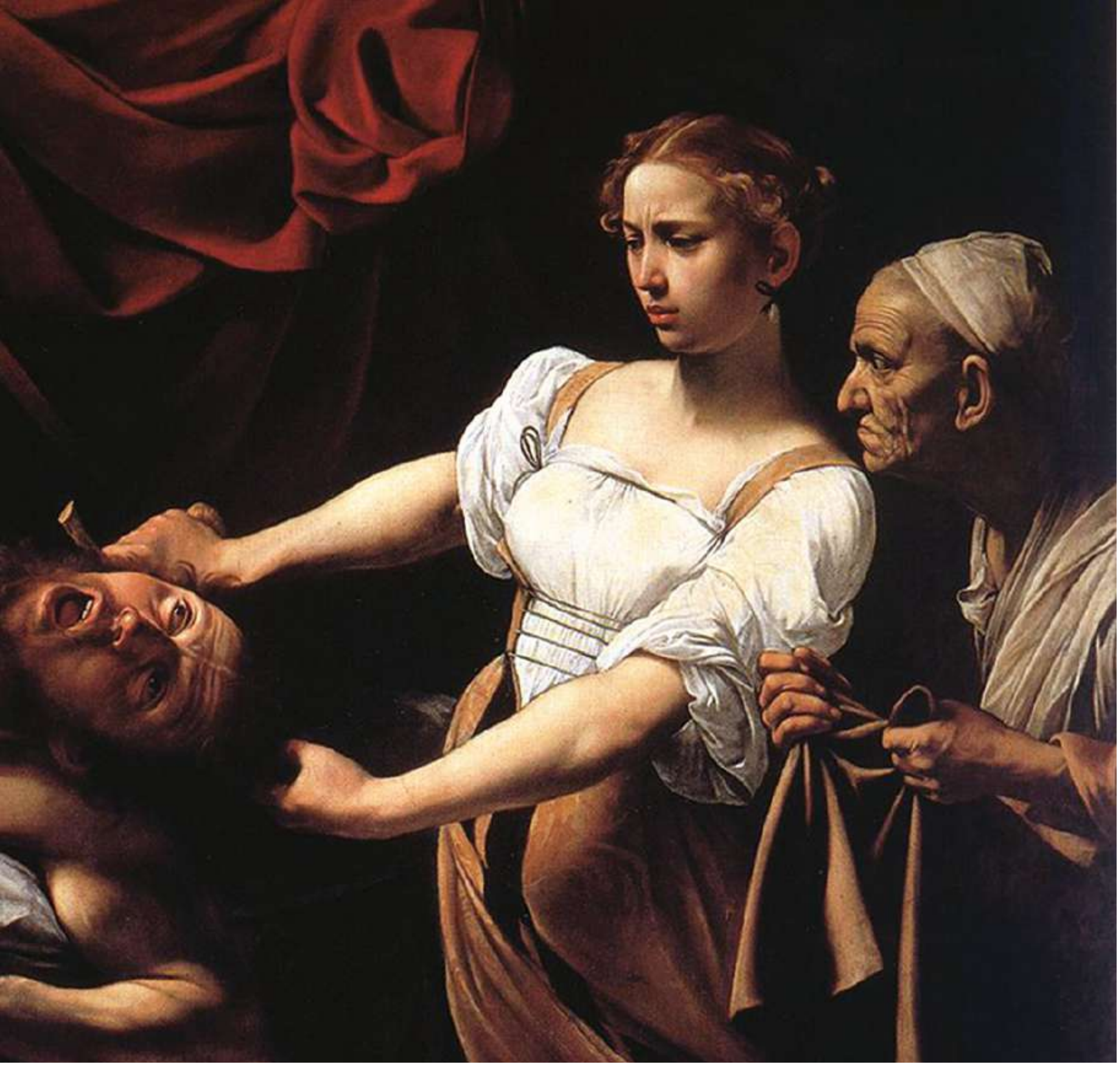
Caravaggio and nemesis artist Giovanni Baglione were embroiled in a high-stakes war that took place on canvas

Italian painter Giovanni Baglione was intensely jealous of Caravaggio's success. Fuelled by his envy, in 1602 he painted a picture to rival and openly slur Caravaggio at an annual exhibition. Baglione then took this further by repainting the scene *Divine Love* with Caravaggio's unmistakable features in the face of the devil, outwardly accusing him of sodomy.

Caravaggio waited to retaliate, and in 1603 he circulated lewd and sexual poems about Baglione across Rome, giving him a nickname that translates to 'Jonny Baggage' or 'Jonny Testicle'. The artists' feud would continue, with Baglione even accusing Caravaggio of hiring an assassin. However, after Caravaggio's death, it was Baglione who was one of the artist's first biographers, filling his work in part with truths and in part with his own personal musings of the artist's shortcomings.



Boy With A Basket Of Fruit is one of Caravaggio's earliest works and was painted c.1593



24 April 1604

Food Fight!

Rome restaurant left reeling as artist paints with food

Renowned bad boy of baroque Caravaggio was arrested on 24 April 1604 for causing a ruckus in a restaurant. Witnesses say the revered Roman took almighty umbrage at artichokes that were not cooked to his taste. "I told him to smell them," the assaulted waiter said, at which point Caravaggio proceeded to fling the plate at the man's face.

1 September 1605

REVENGE PLOT UNCOVERED

Caravaggio hurls stones at landlady's house

Once again Rome's red-blooded delinquent has hit the headlines, this time for abusing the trust and kind nature of his hardworking landlady. Prudentia Bruni, who owns artist Caravaggio's current dwelling, had her own house pelted with stones as the painter flew into a rage when she exercised her right to lock him out because the degenerate tenant owed her rent.

04 May 1598

Painting with blood?

Celebrity artist caught with illegal weapon

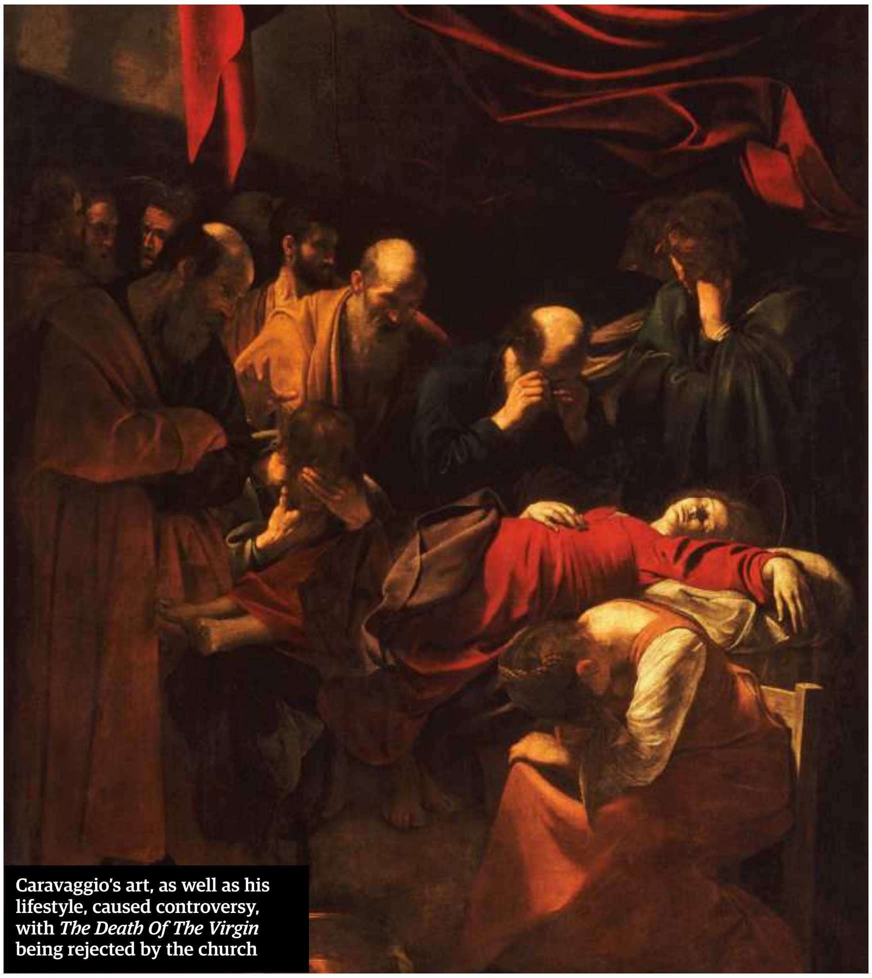
Highly strung artist Caravaggio evidently deems himself above the law. The latest police report states that he was caught at 3am on 4 May 1598, carrying a weapon for which he had no licence. What does a painter need with armament, when canvas is his only battleground and his paintbrush is his sword?

Date: 19 October 1604

The artful dodgers of the law

Painter's crew is banged up

Michelangelo de Caravaggio, Rome's very own lush with a paintbrush, has been arrested yet again, along with three other members of his infamous group of misfits and thugs. This time the offenders were remanded into police custody for viciously throwing stones and hurling lewd insults at the protectors of our great city.



Caravaggio's art, as well as his lifestyle, caused controversy, with *The Death Of The Virgin* being rejected by the church

Who killed Caravaggio?

With no corpse, the artist's demise is cloaked in mystery yet reeks of murder

After years of full-on baroque 'n' roll in Rome culminating in the murder of a member of a dangerous family, there were a fair few people who had it in for the disgraced painter. There were just as many theories as to how he met his end. We know that he was aged 38 when he died somewhere on his journey from Naples to Rome, but we don't know where, what happened to his body, whether he was murdered, and if so, who ended the artist's life.

The long list of people who wanted Caravaggio dead included the Knights of Malta, the Pope and other notable Italian families. Some even believe that his own paints poisoned him. Other reports, such as the one from the boatman who was carrying his paintings, say that he was taken ill. In reality, it was most likely the Knights of Malta who delivered the deathblow. Caravaggio was attacked viciously when he visited the Cerriglio brothel in Naples, in October 1609. He was slashed across the face – a wound of shame known as a sfregio on the Italian streets. This wound would not have healed, and so, as Caravaggio made his final journey from Naples to Rome, perhaps chasing his belongings on an errant ship off Porto Ercole, his wounds most likely got the better of him. Despite some claims, his body has never been 100 per cent identified.

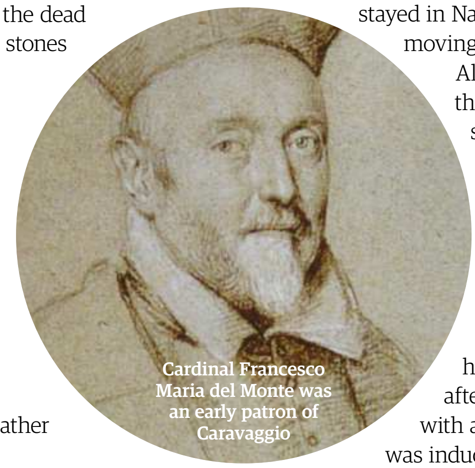
How Caravaggio ended up in Porto Ercole is unclear. Was he chasing the ship that left without him?

her violent nature he was drawn to, as Caravaggio had also taken to openly carrying a sword for which he was routinely arrested (he required a licence but had none) but was always acquitted when he dropped the name of his employer.

It was his friends in high places that elevated Caravaggio's self-importance. He knew that his talent was revered, and he also knew that this appreciation of his work would mean that the powers that be could undo any of his wrongs and get him pardoned for his crimes. On one such occasion, Caravaggio was sued for libel by rival painter Giovanni Baglione and consequently imprisoned. The charges were then elevated after an accusation of sodomy – an act punishable by death. However, on 25 September 1603, he was miraculously freed from jail, bailed on guarantee from the French ambassador. Although by this point he had accepted a new patronage with the powerful Mattei family, it was likely his old friend Cardinal del Monte had a hand in his release.

Following this most recent brush with the law, life got slowly worse for Caravaggio. He was still painting, but he was falling slowly out of favour and was being drawn deeper into criminal activity. Some say it was the rejection of *The Death Of The Virgin* that sent him into a downward spiral. The painting was a commission by a Vatican law official and depicted the mortal remains of Mary without any religious iconography typical of the time. It was seen as an all-too raw and realistic representation of the mother of Christ and so the clergy deemed it unworthy of the church. This was an artist that refused to conform.

Caravaggio was arrested and incarcerated repeatedly, having been caught throwing rocks at policemen and also partaking in a bit of light 'door shaming'. This was a strange practice where men would approach the houses of women who had spurned them in the dead of night and throw insults, stones and sometimes blood and excrement at their doors. Evidently, Caravaggio was keen to show the lady who declined his advances the kind of refined and elegant man she had turned down. He was also taken to trial for attacking a Vatican notary from behind, and even accused of being a pimp among many other rather scandalous denunciations.



Cardinal Francesco Maria del Monte was an early patron of Caravaggio

We are able to gain such a rich and detailed look into the sordid and crazy life of Caravaggio thanks to the incredibly detailed archives of the Roman police, or sbirri. Each account of Caravaggio's wrongdoings and altercations with the law was painstakingly recorded in handwritten script, providing a timeline of his various misdemeanours and their corresponding lucky escapes. However, Caravaggio's streak of good fortune was about to run out.

The undoing of Michelangelo Merisi de Caravaggio began on 28 May 1606. Official documents say he attended a match of pallacorda, a tennis-like game popular at the time. However, no pallacorda was to be played – this was just a ruse to cover up the fact that it was a duel between Caravaggio and Ranuccio Tomassoni – a well-known pimp that controlled his favourite courtesan, Fillide Melandroni. Duelling was illegal and punishable by death. Whether they were fighting over her, territory, or something else, we will never know for sure. But what is clear is that Caravaggio managed to incapacitate Tomassoni, and using his 1.2-metre-long duelling sword, attempted to castrate his opponent. Lacking the skill to accomplish this ambitious butchery, Caravaggio instead stabbed him in the femoral artery and left Tomassoni to bleed to death.

After taking a life, Caravaggio fled. He was exiled and made a 'bando capitale', meaning anyone in the Papal States was within their rights to kill him and take his head back to Rome to claim a handsome reward. Outlawed, he absconded to Naples and sought protection with the Colonna family, who had ties with his late mother. It was here that he painted *David With The Head Of Goliath*. Goliath's head is yet another self-portrait of Caravaggio, almost as if he was taunting the authorities that his head was still firmly on his shoulders. The painter stayed in Naples for nine months before moving on to Malta.

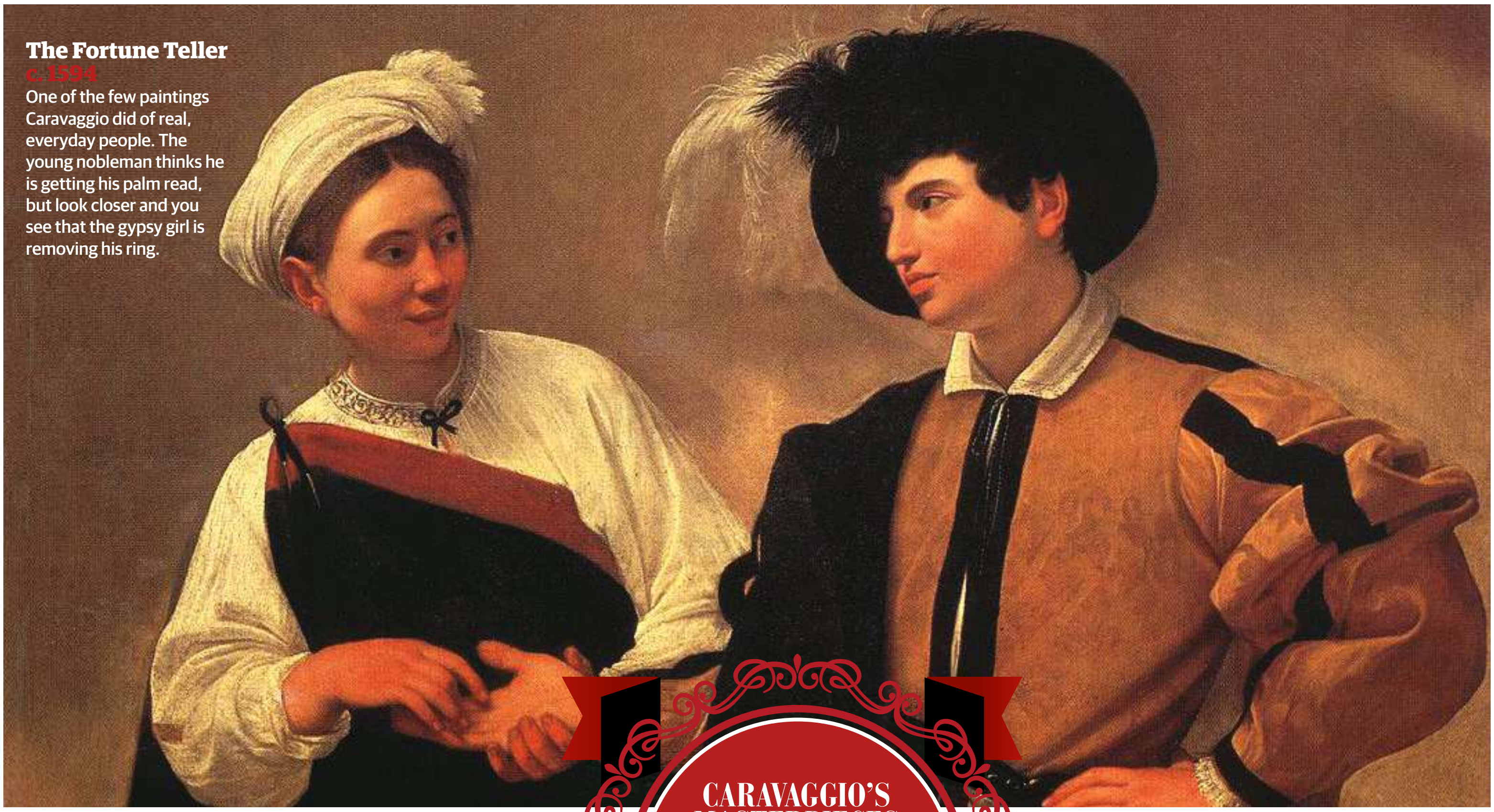
Although outlawed and debased, there was still some of the swaggering Caravaggio left intact, as when in Malta he was keen to join the Knights Of Saint John (also known as the Knights Of Malta), a holy chivalric order dating back to the Crusades. As an accomplished swordsman, he fitted the brief well, and after impressing the knights with a portrait of their leader, he was inducted into the order despite his criminal record. This safety was short lived, however, as in true Caravaggio style he fled after an undocumented altercation. Some believe it was a bust-up between the painter and some knights; some believe it was sexually motivated. Either way, Caravaggio was on the run once more having been de-frocked from the Knights of Malta in absentia.

From Malta, he briefly stayed in Sicily – where he was welcomed as a celebrity artist – before journeying to Naples with the view to travelling back to Rome to receive a papal pardon for his crimes. Sadly, he would never make it that far and would die a criminal. The life of Caravaggio, with its deep, cavernous shadows and amazing, illuminating bright spots that mirrored the startling chiaroscuro of his own masterpieces, would come to an end on his final journey back to Rome.

> "He was exiled and made a 'bando capitale', meaning anyone in the Papal States was within their rights to kill him and take his head back to Rome"

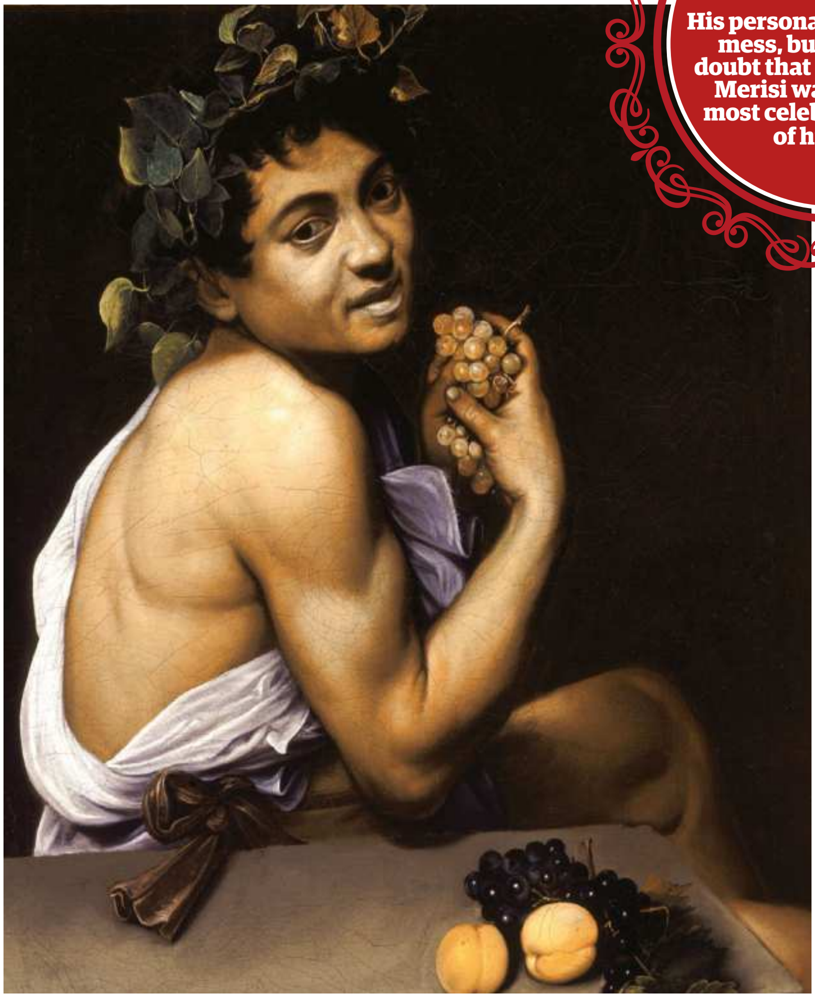
CARAVAGGIO'S MASTERPIECES

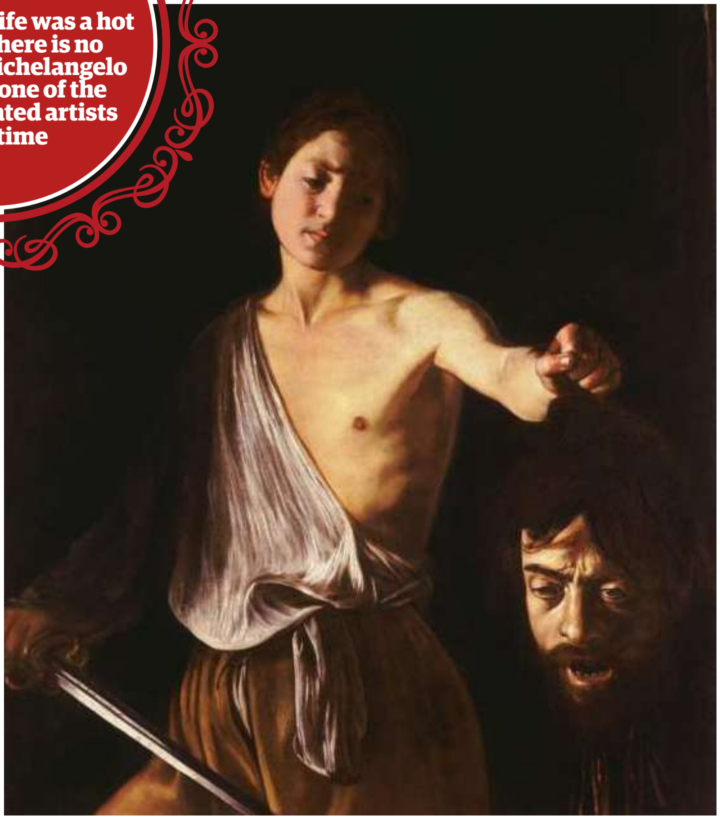
His personal life was a hot mess, but there is no doubt that Michelangelo Merisi was one of the most celebrated artists of his time



The Fortune Teller
c. 1594

One of the few paintings Caravaggio did of real, everyday people. The young nobleman thinks he is getting his palm read, but look closer and you see that the gypsy girl is removing his ring.



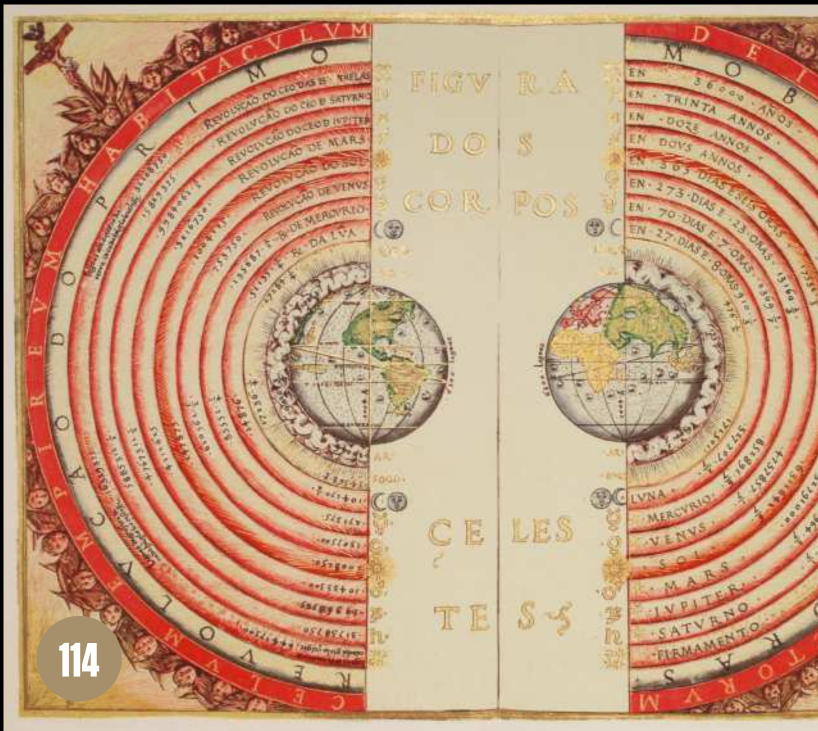


Self Portrait As Bacchus
c.1593

Caravaggio depicts himself as Bacchus, the god of wine, but with a difference. In this painting, he is sick: his lips are a bluish hue and his skin is sallow and yellow.

David With The Head Of Goliath
c.1606

Thought to have been painted in reaction to his criminal acts and sentencing in Rome, David holds up the head of Goliath, whose features show a striking resemblance to Caravaggio himself.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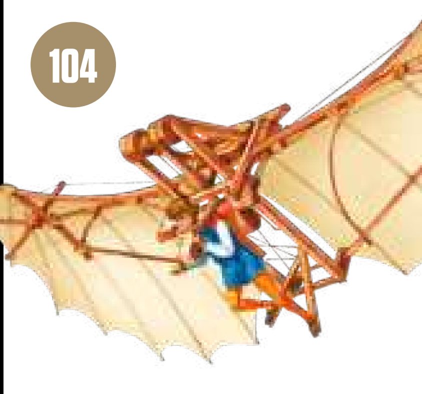

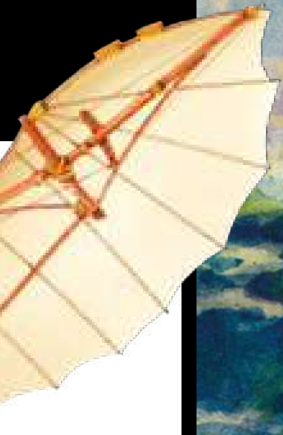

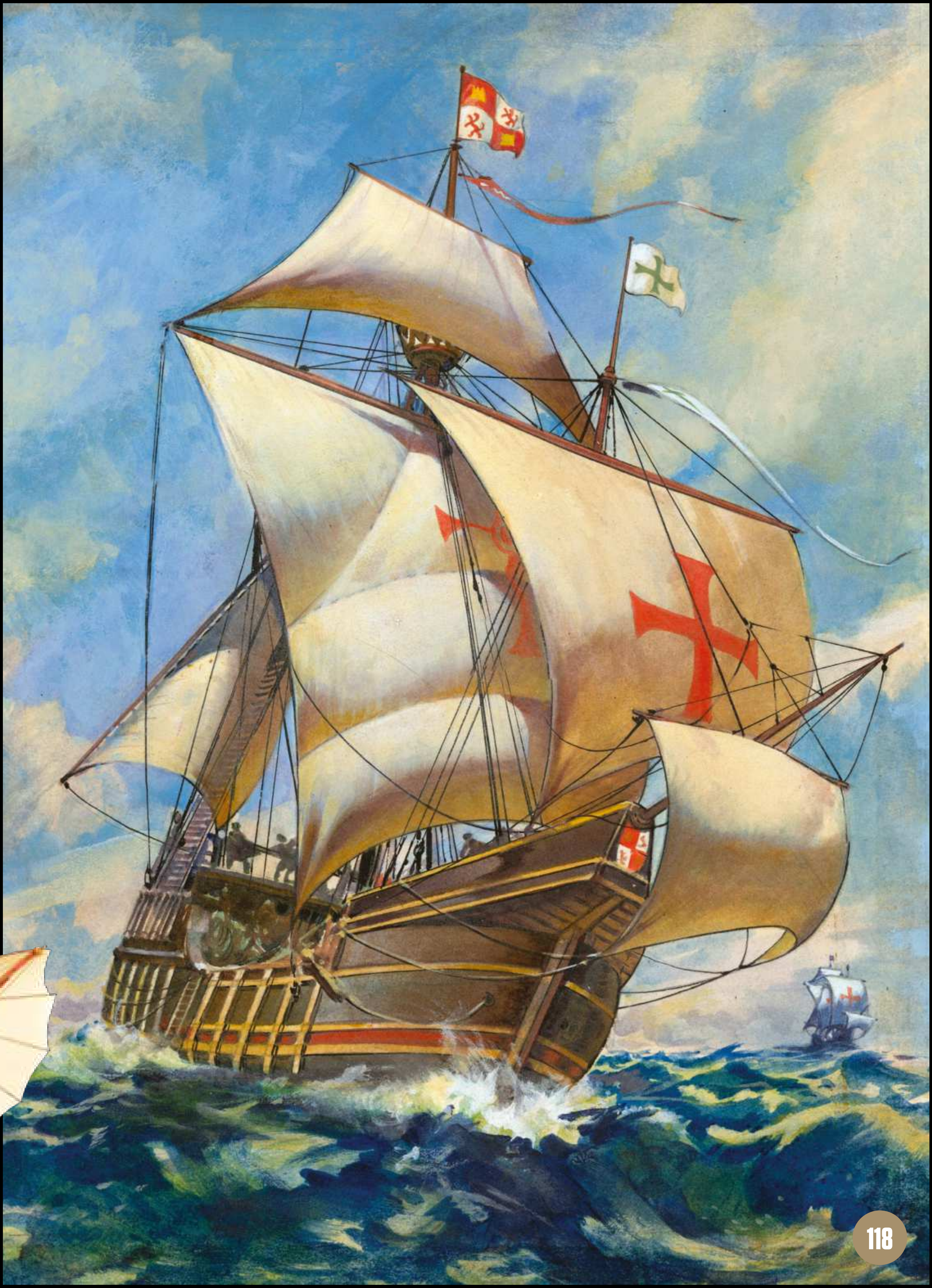

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The rebirth of thought & knowledge

Written by
Derek Wilson

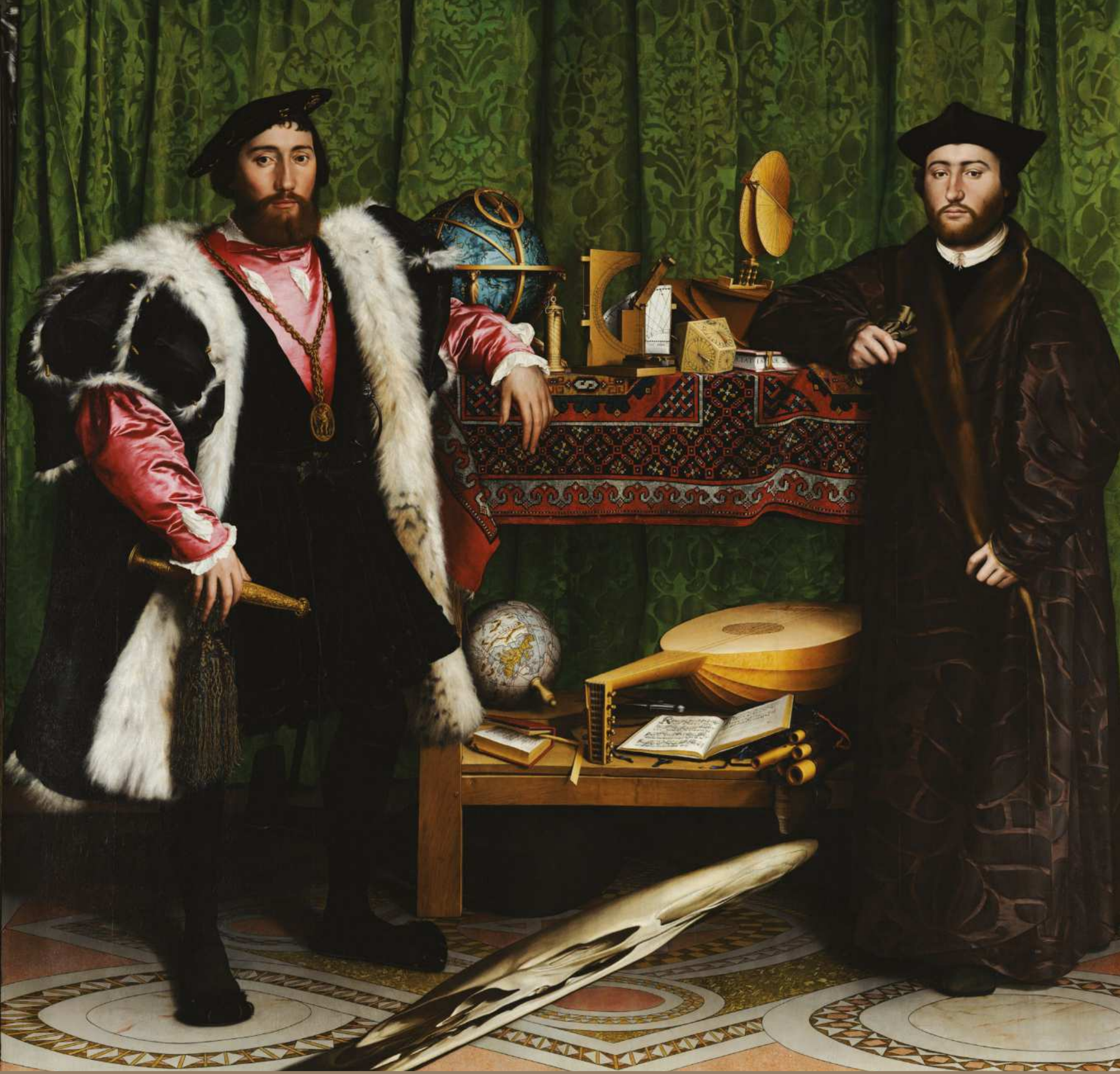
During the 15th and 16th centuries European people came to think differently about themselves and their world. Knowledge was 'reborn'

The Renaissance was a creative but also in intensely disturbing time. Many people believed that the year 1500 would mark the end of the world – a fear captured by Albrecht Dűrer (1471-1528) in his haunting engraving *The Four Horsemen Of The Apocalypse*. Medieval Europe for all its inhabitants meant Western Christendom. Broadly speaking the states lying to the west of the Danube and the Vistula belonged to one spiritual/cultural whole whose headquarters was Rome. The pope held ultimate control over the religious life of the continent through four networks: political, administrative, devotional and intellectual. Rome was in diplomatic contact with and claimed ultimate authority over all terrestrial rulers, from 1314 papal regalia included the triple crown, symbolising 'father of kings', 'governor of the world' and 'vicar (representative) of Christ'. Through diocesan bishops and parish priests the pope regulated the ritual observances and doctrinal beliefs of the people. The religious orders of monks, nuns and friars patterned the ideals of holy living. In the growing number of universities, theology was the 'queen of the sciences'. The Church provided the teachers and supervised the curricula. For all most people knew, this was the way things had always been. However, scepticism and criticism of the status quo were not new. From time to time dissenters had appeared who questioned papal pronouncements and traditional theology. Rome had disciplinary powers to deal with 'heretics' and did not hesitate to use them. However, in the 15th century the number of 'free-thinkers' grew and it was from within the universities that the main challenges came that would trigger what we now call the Renaissance and the Reformation.

It seldom makes much sense to fix dates for the 'start' of major historical movements but in the 1450s two events occurred which made an intellectual impact that can only be called revolutionary. In Metz – which is now in northern France but was then a free imperial city – Johann Gutenberg developed the technique of printing with movable type. Far to the east, Constantinople (modern Istanbul), the ancient centre of eastern Orthodox Christianity, was overrun by Muslim conquerors in 1453. One consequence of the latter was the flight of Christian monks and scholars, bringing with them precious ancient books and manuscripts never seen in the West. As well as early Christian writings, this scholarly bonanza included Greek texts from the classical world. These augmented the volumes of ancient wisdom already preserved in monastic libraries and created a flurry of excitement among international scholars. They discussed these new sources in their correspondence but, more importantly, thanks to Gutenberg's invention, they reproduced these texts and wrote commentaries on them which could be widely circulated. There appeared, within a few years, a body of avant-garde academics exploring new ways of looking at the world.

The prime movers of this philosophy were the Italian scholars, Giovanni Pico della Mirandola (1463-1494) and Marsilio Ficino (1433-1499). In essence, they suggested that there existed a God-given *prisca theologia* ('old religion') from which all subsequent religions and philosophies had diverged. In this they followed the late classical development of the teaching of Plato, called 'Neoplatonism' by later historians – see page 24 – but also incorporated Jewish and Islamic elements. Their syncretistic approach to the pursuit of *scientia* (knowledge) focussed on human intellectual endeavour and has, thus, since the 19th century, been labelled 'humanism'.

This brought a new breed of philosophers into conflict with the upholders of traditional Catholic teaching. This claimed all knowledge was based on divine revelation as contained in Christian



The Ambassadors, Hans Holbein, 1533

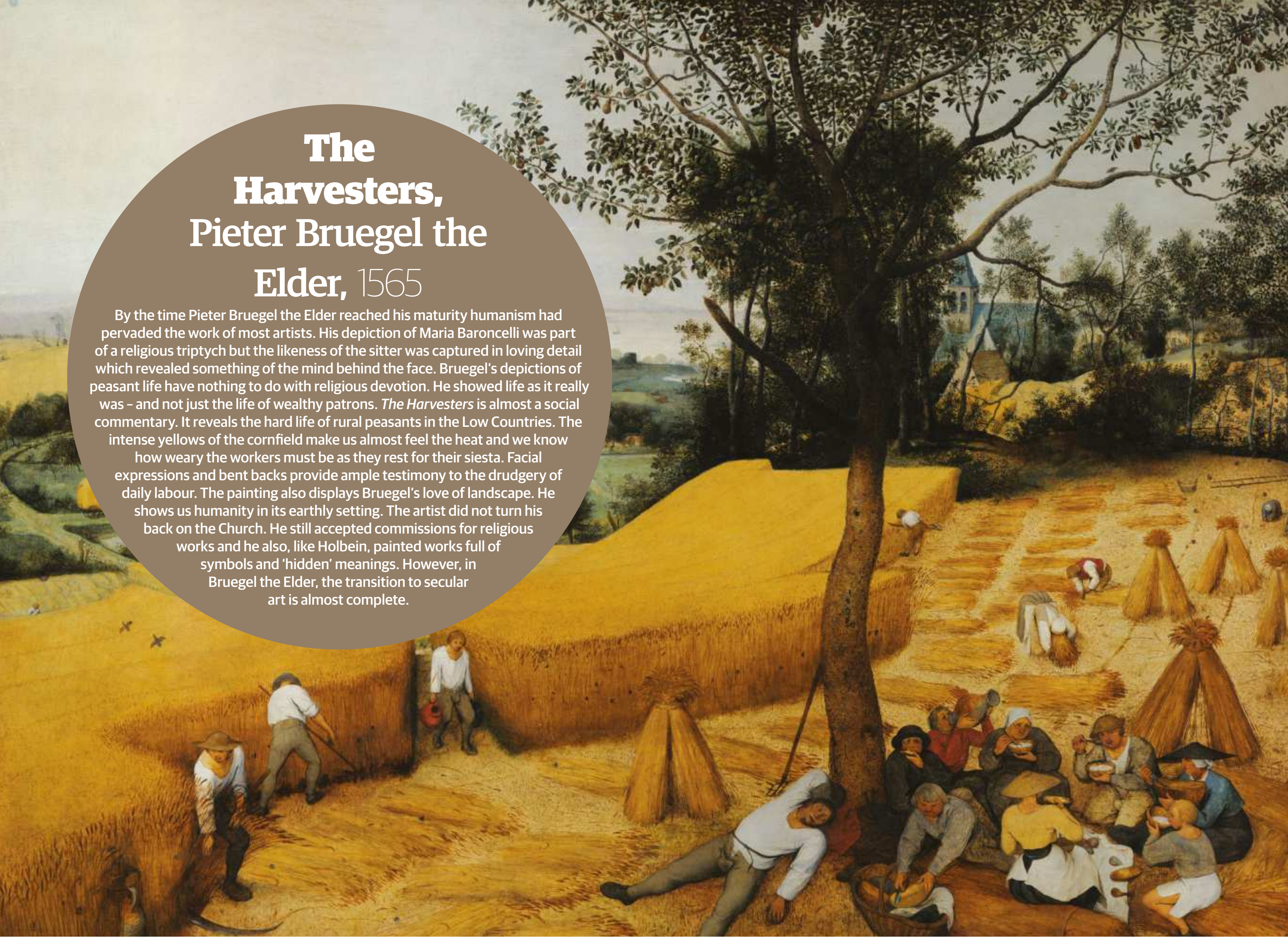
This remarkable painting by Hans Holbein the Younger can be understood on various levels

1 A celebration of Renaissance scholarship and culture. The terrestrial and celestial globes relate to the study of geography and astronomy. The mathematical instruments represent geometry and arithmetic. The musical instruments draw attention to the new movements in the arts.

2 A representation of humanist thinking. The two figures are French ambassadors, François de Dinteville (1504-55) and Georges de Selve (1508-41). De Dinteville later came under suspicion for heresy while his companion was considered a more moderate humanist.

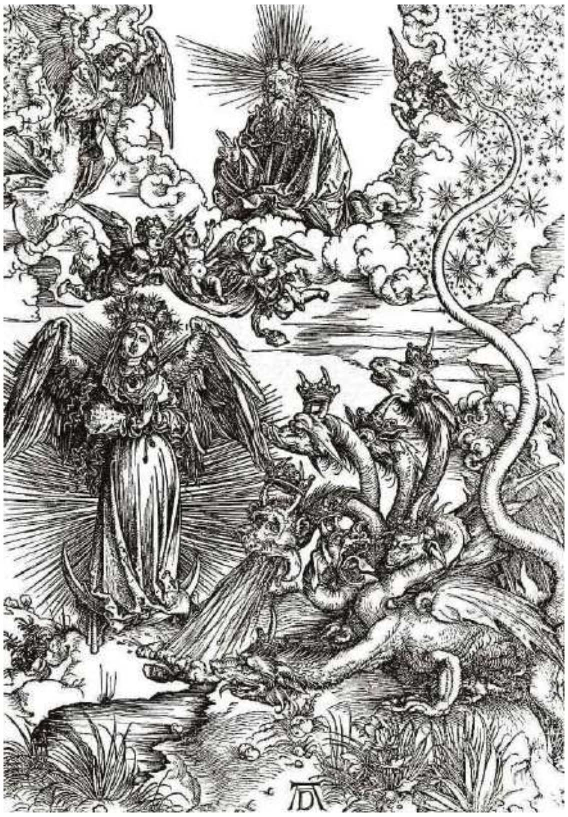
3 A demonstration of discord. The lute has a broken string while on the celestial globe a hen attacks a hawk. The foreground is dominated by a distorted skull, which can only be viewed properly by standing to the right of the picture, otherwise it looks more like an error.

4 An assertion of religion in peril. In the top left hand corner a crucifix is largely obscured by the curtain. Holbein is pointing out the richness brought to European life by the remarkable achievements of Renaissance scholarship. But all these accomplishments have not made the world a better place. The viewer, need to be reminded by the distorted skull (or anamorphosis) that this life, with all its pros and cons, is transitory. We neglect the next world (the crucifix) at our peril. *The Ambassadors* has many other stories to tell, for clever signs, symbols and secret meanings were parts of the stock-in-trade of Renaissance artists. For all its celebration of new truth and rejection of old dogma, the Renaissance had not banished anxiety about ultimate human destiny. Van Eyck's frightening image of *The Last Judgement* still expressed what many felt. Holbein suggests that, in challenging Christian revelation, humanists might be throwing out the baby with the bathwater.



The Harvesters, Pieter Bruegel the Elder, 1565

By the time Pieter Bruegel the Elder reached his maturity humanism had pervaded the work of most artists. His depiction of Maria Baroncelli was part of a religious triptych but the likeness of the sitter was captured in loving detail which revealed something of the mind behind the face. Bruegel's depictions of peasant life have nothing to do with religious devotion. He showed life as it really was – and not just the life of wealthy patrons. *The Harvesters* is almost a social commentary. It reveals the hard life of rural peasants in the Low Countries. The intense yellows of the cornfield make us almost feel the heat and we know how weary the workers must be as they rest for their siesta. Facial expressions and bent backs provide ample testimony to the drudgery of daily labour. The painting also displays Bruegel's love of landscape. He shows us humanity in its earthly setting. The artist did not turn his back on the Church. He still accepted commissions for religious works and he also, like Holbein, painted works full of symbols and 'hidden' meanings. However, in Bruegel the Elder, the transition to secular art is almost complete.



LEFT: Albrecht Dürer's *The Revelation of St John: 10. The Woman Clothed with the Sun and the Seven-headed Dragon*
RIGHT: Tourist's inside St Peter's Basilica, the Vatican, Rome

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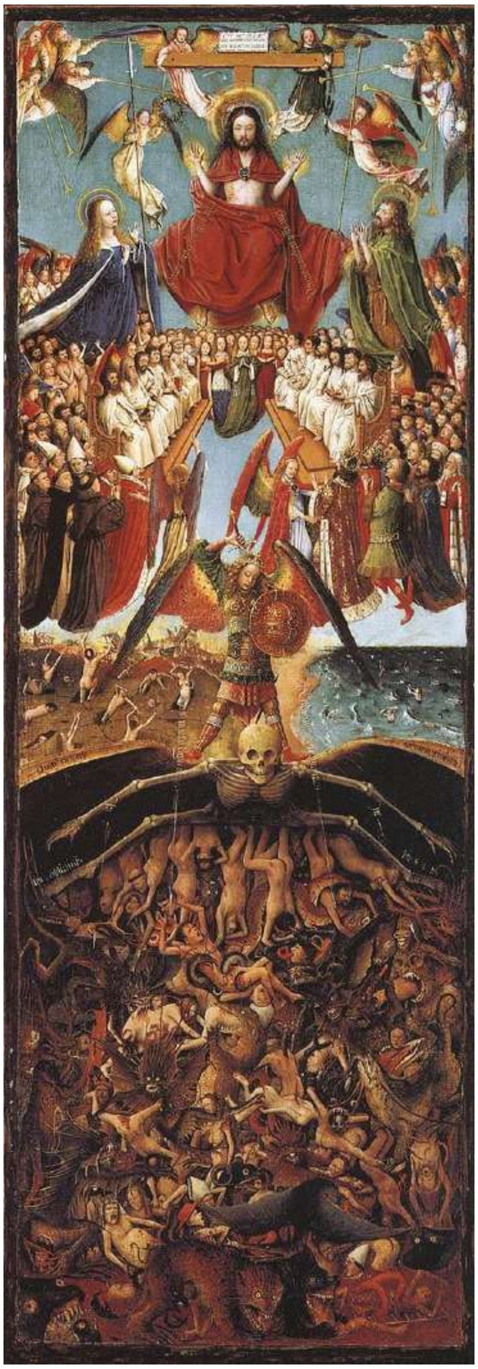
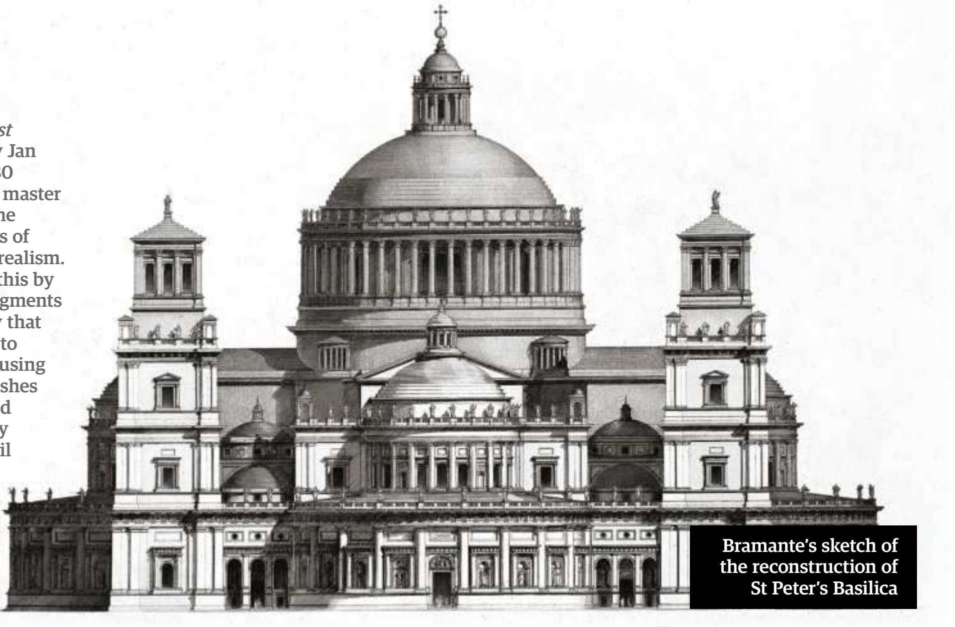
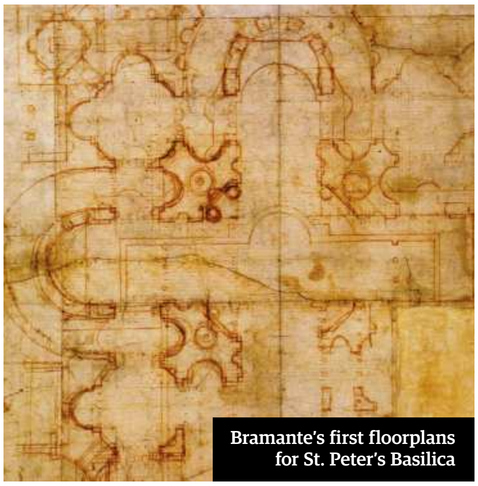


LEFT: *The Last Judgement* by Jan van Eyck, 1430 This Flemish master was among the great pioneers of Renaissance realism. He achieved this by mixing his pigments in such a way that they seemed to glow, and by using ultra-fine brushes which enabled him to convey intricate detail



Bramante's sketch of the reconstruction of St Peter's Basilica



Bramante's first floorplans for St. Peter's Basilica

scriptures, embellished over the century by the ‘Fathers’ – the great doctors of the Church – and endorsed by the papacy. The system of theological teaching in medieval universities was known as ‘scholasticism’. By the 15th century it had become a restricted, controlled and pedantic methodology. In 1215, Pope Innocent III had declared: “The secret mysteries of the faith ought not… to be explained to all men in all places… Such is the depth of divine Scripture, that not only the simple and illiterate but also the prudent and learned are not fully sufficient to try to understand it.”

In other words, the Bible is the only source of divine knowledge and the Church is the only guide to understanding the Bible and the only men able to teach what the Church says are those who have been through the scholastic mill. For most young men passing through the universities what this meant, in practice, was learning by rote the ‘correct’ interpretation of the Bible as formulated, in the 12th century, by the French scholar, Peter Lombard (1100-1160) in his monumental Bible commentary, *The Four Books Of Sentences*.

This does not mean that the medieval church produced no independent, original thinkers. Of those scholars who contributed fresh approaches to the search for knowledge the most influential was Thomas Aquinas (1225-1274). He made a close study of the works of Aristotle and produced a body of works (principally the *Summa Theologiæ*) which used the methods advocated by the Greek philosopher to prove, by logical process, the doctrines of the Church. Since everything comes from God, he averred, revelation and reason cannot be in conflict. For example, he produced five arguments for the existence of God.

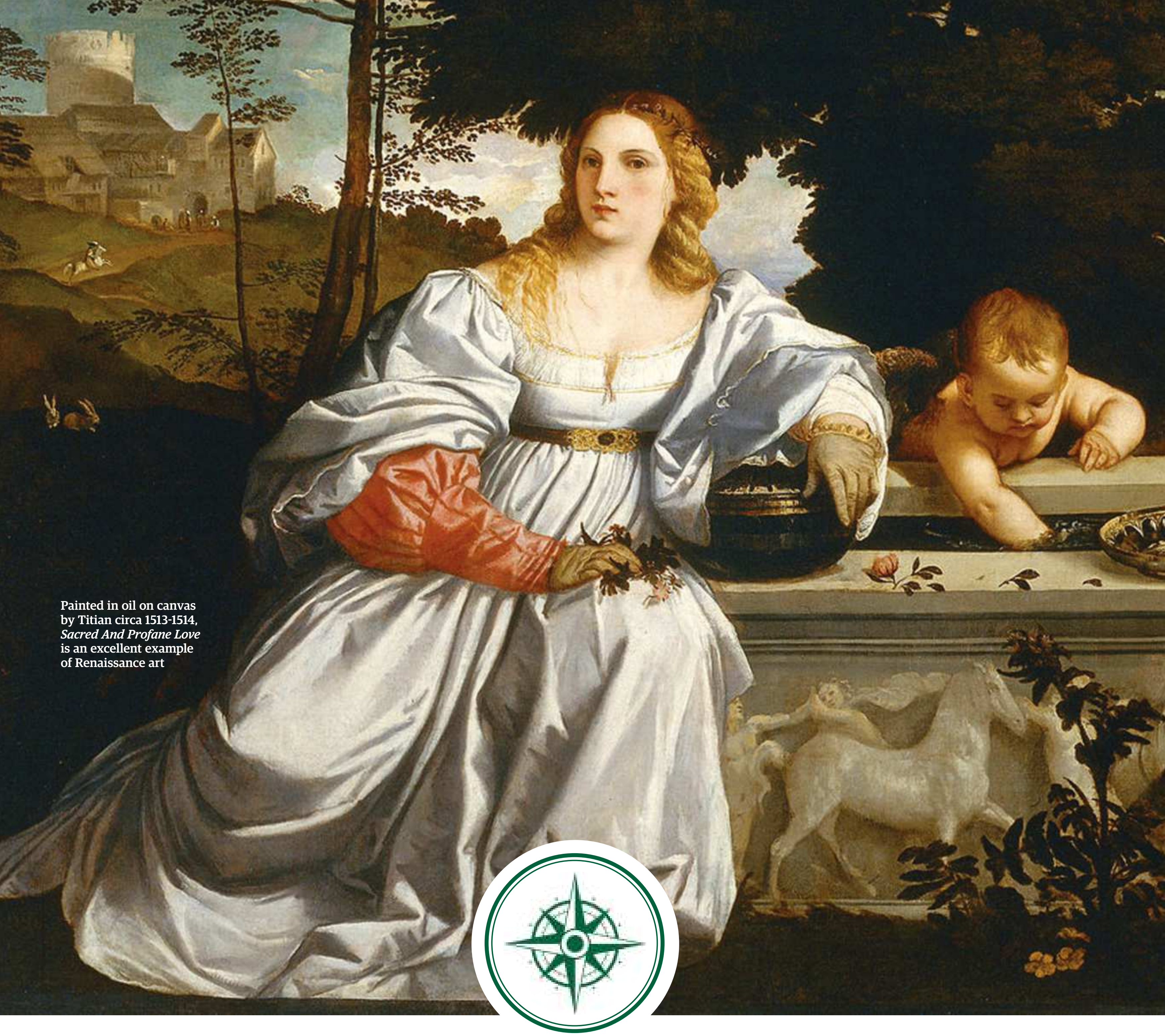
The *Summa* and the *Sentences* became the intellectual container – cast iron and impervious – of official Church teaching. Ironically, it was when humanist scholars applied logic, drawing upon newly-available sources, to the study of Christian belief that the container was shown to be less than absolutely watertight.

Ever since the 4th century the Church’s basic text had been the Vulgate, St Jerome’s Latin translation of the Bible. In 1516, the Dutch scholar, Desiderius Erasmus, published the *Novum Instrumentum omne*, a fresh Latin version of the New Testament based on the best ancient Greek texts which had become available. Reaction in several orthodox quarters was one of shock and horror. Erasmus’ suggestion that the Vulgate was anything less than perfect was unacceptable. But the implications ran deeper. Erasmus rejected St Jerome’s translation ‘do penance’ and replaced it with ‘repent’. This shifted responsibility from performance of a ritual to the believer’s individual, private relationship with God. But Erasmus went still further. He urged that the Bible should be translated into every vernacular: “May the peasant sing extracts from the Scripture as he ploughs the field, the weaver sing a Biblical song while working at his loom.”

Widespread illiteracy had prevented any major challenge being mounted by ordinary people but printed books, not only made learning widely available, they created a popular demand for education. The printing press even impacted on the illiterate majority, for engravings such as Dűrer’s were available, cheap to ordinary people. Pictures, often satirical, said more than words. Soon, the Bible itself was being translated into modern languages. The Church was losing its grip on the minds of the laity.

All this might not have mattered quite so much had the papacy not been at a low ebb. It was severely devalued by the corrupt Alexander VI (Rodrigo Borgia, 1492-1503) and the extravagant voluptuary, Leo X (Giovanni de Medici, 1513-21). The Church hierarchy was mercilessly satirised by the humanist, Sebastian Brant (1457-1521), in his *Ship Of Fools* and by Erasmus in his *In Praise Of Folly*.

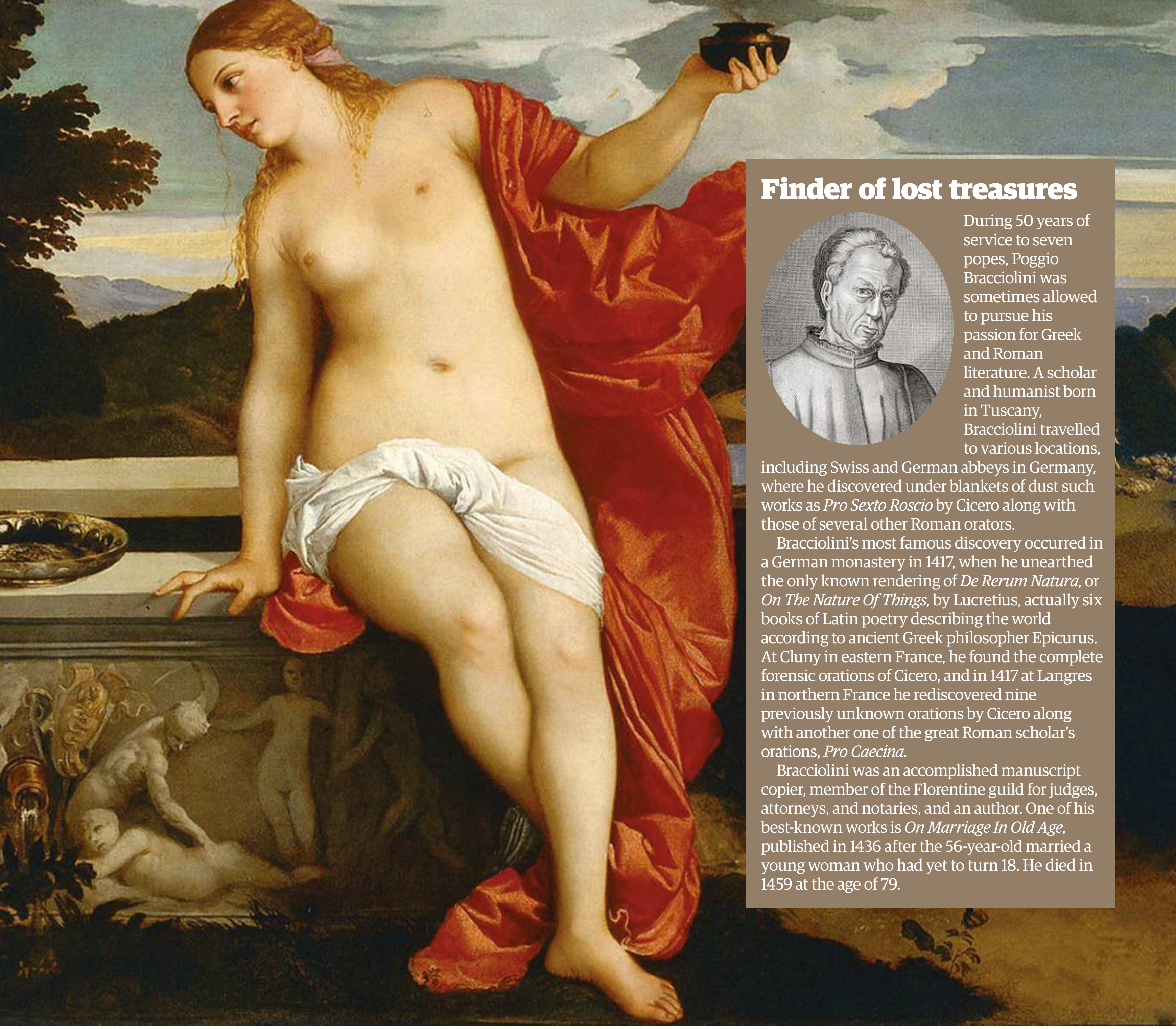
The ecclesiastical establishment became a fortress under siege, undermined by humour and assailed by intellectual argument. It reacted by asserting its ancient authority. The works of Ficino, Mirandola and Erasmus were among those placed on the list of banned books, and the Holy Inquisition, the Church’s instrument for ‘correcting error’ was given sharper teeth. As the 16th century wore on, it was not just defiant Protestants who were imprisoned and executed; many honest and devout scholars joined them.



Painted in oil on canvas by Titian circa 1513-1514, *Sacred And Profane Love* is an excellent example of Renaissance art

Art, literature and fresh perspective

As literature, commentary and artistic images became more accessible to the common people thanks to the Gutenberg press, an appreciation for new ideas spread across Europe



Finder of lost treasures

During 50 years of service to seven popes, Poggio Bracciolini was sometimes allowed to pursue his passion for Greek and Roman literature. A scholar and humanist born in Tuscany, Bracciolini travelled to various locations, including Swiss and German abbeys in Germany, where he discovered under blankets of dust such works as *Pro Sexto Roscio* by Cicero along with those of several other Roman orators.

Bracciolini's most famous discovery occurred in a German monastery in 1417, when he unearthed the only known rendering of *De Rerum Natura*, or *On The Nature Of Things*, by Lucretius, actually six books of Latin poetry describing the world according to ancient Greek philosopher Epicurus. At Cluny in eastern France, he found the complete forensic orations of Cicero, and in 1417 at Langres in northern France he rediscovered nine previously unknown orations by Cicero along with another one of the great Roman scholar's orations, *Pro Caecina*.

Bracciolini was an accomplished manuscript copier, member of the Florentine guild for judges, attorneys, and notaries, and an author. One of his best-known works is *On Marriage In Old Age*, published in 1436 after the 56-year-old married a young woman who had yet to turn 18. He died in 1459 at the age of 79.

The breadth of the Renaissance touched virtually every aspect of life, spanning two centuries of rediscovery, renewal, and revival. Perhaps more than any other forms of discourse and expression, the art and literature of the Renaissance brought new perspective and energy to human existence while shaping the modern era.

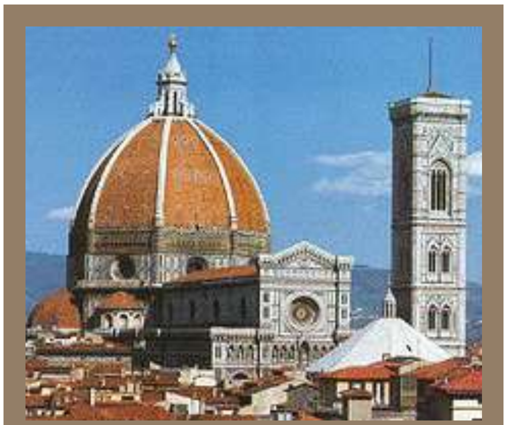
Visual arts, such as painting and sculpture, provide insight into the prevailing worldview. The written word provokes thought and debate. During the Middle Ages the focus of mankind was almost solely on the hereafter. The Church dominated thought and deed. Art and literature reflected this social emphasis.

At the dawn of the Renaissance, centered in the prosperous Italian city of Venice, the convergence of numerous phenomena produced an unprecedented revitalisation. Commercial wealth supplied disposable income, and patronage of the arts flourished, allowing artists to become prolific like never before. The rediscovery of ancient classical texts from the Greek and Roman Empires stimulated logical and critical thinking.

The groundswell of humanism was further facilitated by Arabic scholars, who introduced mathematical concepts pointing to a new understanding of the physical world and of commerce. The advent of movable type made literature, commentary, and artistic images accessible to the common people.

Renaissance artists moved from nearly exclusive depictions of religious themes to incorporating vistas of the world around them, sometimes combining the spiritual with the secular and the mythological. With linear perspective, greater emphasis on the visual relationship between light and darkness, and the introduction of oil-based paints that were blended to produce vivid colour and texture that the earlier egg tempera medium could not match, artists of the Renaissance created three-dimensional depictions that fascinated viewers, beautifying homes and public places.

Rather than seeing their artistry solely in relief against a static background, Renaissance sculptors began to conceive of their subjects in the round, a 360-degree visual that harkened back to the artists of antiquity. This transformation may be attributed to one of the earliest archeological evaluations of Roman ruins by the renowned sculptor Donatello and architect Filippo Brunelleschi. Their assessment of sculpture and architecture in the ancient world sparked renewed interest and touched the painters of the period as well.



Brunelleschi and the dome

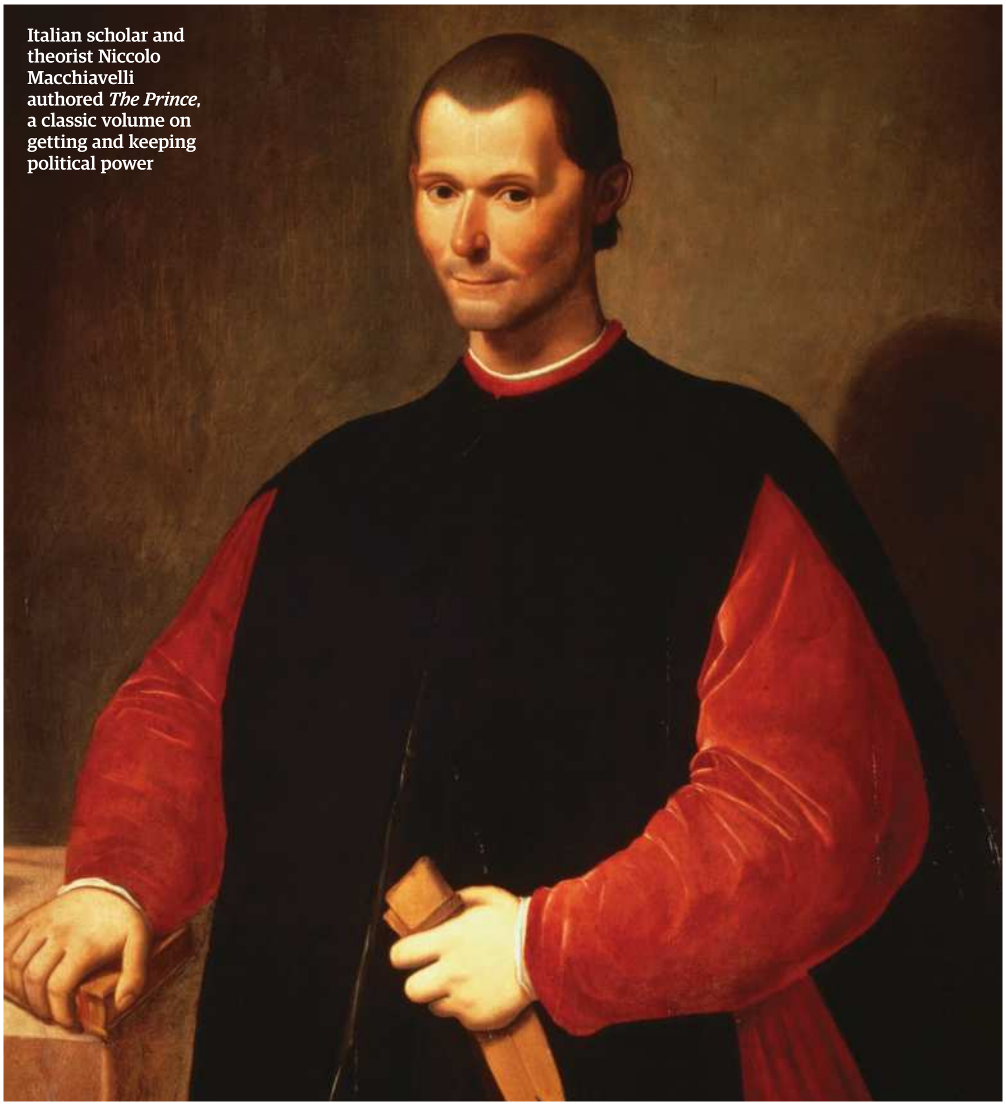
From 1296 to 1461 the Santa Maria del Fiore Cathedral, the focal point of religious life in Florence, was under construction. In a triumphant blend of old and new, the Gothic structure was crowned with the world's largest brick dome, an inspiring Renaissance work designed by Filippo Brunelleschi, an architectural genius also considered by scholars to be the first modern engineer.

Also known for his historic architectural assessment of ancient Roman ruins conducted along with the famed sculptor Donatello, Brunelleschi is said to have developed a concept of linear perspective, which found applications in Renaissance visual art.

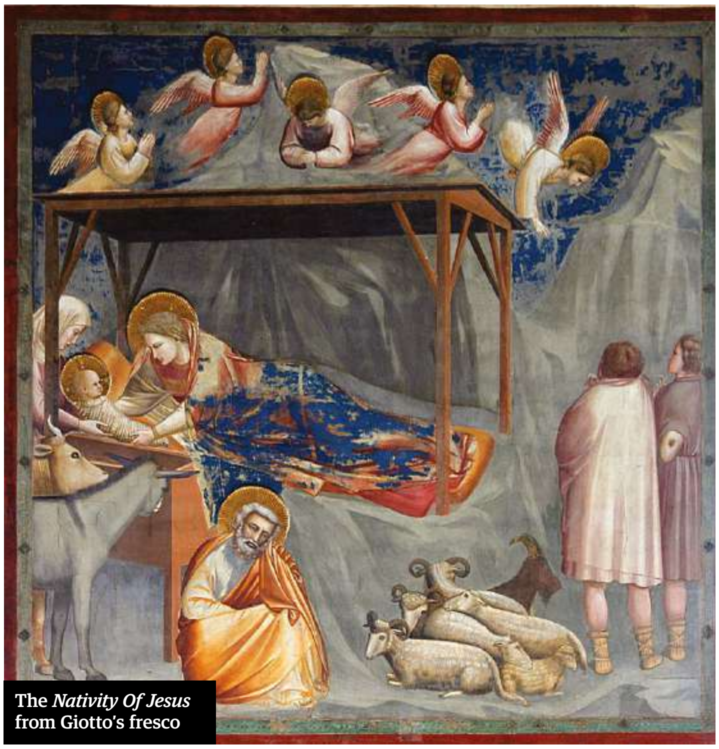
Brunelleschi and Lorenzo Ghiberti were the two finalists during the competition to design the famous dome. Sponsored in 1418 by the Arte della Lana, the Florentine wool merchants' guild, one version of the competition is said to have involved making an egg stand up on a slab of marble. In his book *Lives Of The Most Excellent Painters, Sculptors, And Architects*, Giorgio Vasari wrote that Brunelleschi gave '...one end a blow on the flat piece of marble, [and] made it stand upright...The [other] architects protested that they could have done the same; but Filippo answered, laughing, that they could have made the dome if they had seen his design.'

The winner undoubtedly utilised knowledge gained during his visit to Rome, where he studied other great domes such as the Pantheon in depth. The dome of Santa Maria del Flore is 42.21 metres in diameter, incorporating an octagonal vault supported by solid stone ribs at each corner and structural support ribs at other intervals. The dome is built with interior and exterior layers, including more than four million bricks, and is capped by a stone lantern.

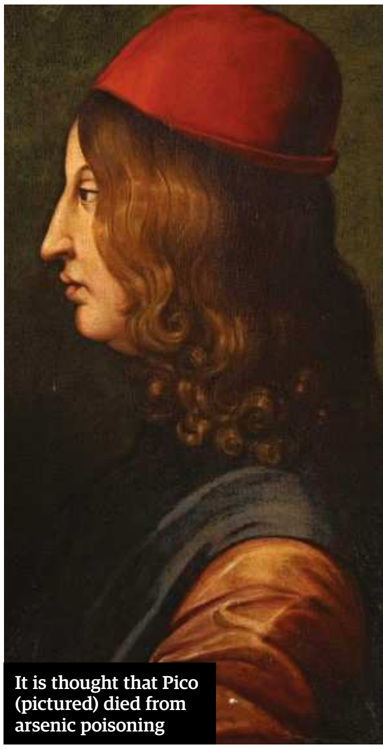
Brunelleschi, who died in Florence in 1446 at the approximate age of 69, was also a pioneering mathematician and artist.



Italian scholar and theorist Niccolo Macchiavelli authored *The Prince*, a classic volume on getting and keeping political power



The *Nativity Of Jesus* from Giotto's fresco



It is thought that Pico (pictured) died from arsenic poisoning

Art, literature and fresh perspective

From 1409-1411, Donatello created *Saint John The Evangelist*. The sculpture resides in the Museo dell'Opera del Duomo in Florence

Florentine artist Giotto di Bondone, active during the late Middle Ages and the early Renaissance, is recognised as one who shifted from the detached or symbolic figures of Medieval art to concentrate on the individual with increased volume, depth of emotion, and decidedly human characteristics. As a transitional artist from the Middle Ages to the Renaissance, Giotto presented an interactive style rather than the impassive images of earlier times. Other artists, many of them destined for greatness in their own right, took notice.

Renaissance artists did not abandon the tradition of religious works and were often commissioned to adorn the walls of cathedrals and churches with frescoes, paintings done with colours in wet plaster so that the drying surface incorporates those hues. Painting on wood panels, canvas, or other surfaces, artists also transitioned gradually from tempera to combine pigments with linseed oil. These oil-based paints dried slowly, giving artists the freedom of expression through a technique called *sfumato* to blend shades in a seamless manner without defined lines. The coexistence of light and shadow and the subtleties of colour were presented with realism that had never been previously achieved.

Dutch artist Jan van Eyck is generally credited with popularising the oil medium. Experimentation with oils reached Renaissance Florence and Venice around 1475, while influencing the work of painters across the European continent.

During the Renaissance, innovative painting techniques revolutionised the way that visual art is created and enjoyed. As the human form emerged from the shadow of the Middle Ages, artists became increasingly familiar with muscle, bone, and facial structure. Depicting the body itself, with natural tone and perceptible movement, required innovative techniques.

Linear perspective in art operates amid an understanding of how the human eye sees the world. While objects that are close appear larger and objects that are more distant appear smaller, the use of foreshortening, or shorter lines, creates an illusion of depth on a two-dimensional surface. Rather than appearing as a flat image, the subject gains realism and ultimately places the viewer in the context of the image itself. Renaissance artists began to establish the position of the viewer with two imaginary lines, one vertical and known as the 'centre of vision', the other horizontal and called the 'horizon line'. Fixing the viewer's position and understanding the premise that parallel lines will converge as distance increases, the artist finds the 'vanishing point', where all lines meet.

Another influential artistic technique called Quadratura developed during the Renaissance as artists painting murals carried images of actual architectural features further into their work to create the illusion that the architecture extends into imaginary space.

The literature of the Renaissance owes its existence to the resurrection of Classic Greek and Roman texts that had been lost, neglected, or suppressed for centuries. Through renewed interest in these, Renaissance writers revived comedy, drama, political commentary, satire, and poetry on an epic scale – long absent or scarce during Medieval times. Simultaneously, Renaissance literature gave voice to the wave of humanism that swept Western culture during the period. Renaissance literature represented revival along with a new secular perspective. Giants of the literary world, whose works still exert profound influence, emerged during the Renaissance.

The primary catalyst for the dissemination of the written word was the printing press and its movable types, invented in Germany by Johannes Gutenberg in the mid-1430s. Prior to the invention of Gutenberg's printing press, books were laborious and expensive to produce as their contents were hand-copied. Much of this work was done by monks, who controlled the actual language – primarily Latin – in which books were written and the majority of the content. Gutenberg made possible the production of pamphlets for the common people, written in the language of the people. As the printing press spread across Europe in the mid-15th century, appreciation for literature and new ideas spread along with it.

The origin of the contemporary humanist element in Renaissance literature is generally attributed to 14th-century Italian poet and scholar Francesco Petrarch. Also during the pre-Renaissance period Florentine author Giovanni Boccaccio wrote *The Decameron*, a collection of 100 vignettes of life in Florence during the scourge of the Black Death. The significance of *The Decameron* lies in its perspective of real experiences of common people and the relationships among social classes.

Completed in 1320, *The Divine Comedy* by Dante Alighieri was a seminal work of the late Middle Ages, recounting in epic poetry Dante's journey through Hell, Purgatory, and Paradise. Although the author's view of human existence and Christian theology are Medieval in nature, the work was written in Tuscan rather than Latin, indicative of the later Renaissance movement toward literature written in the vernacular for the masses.

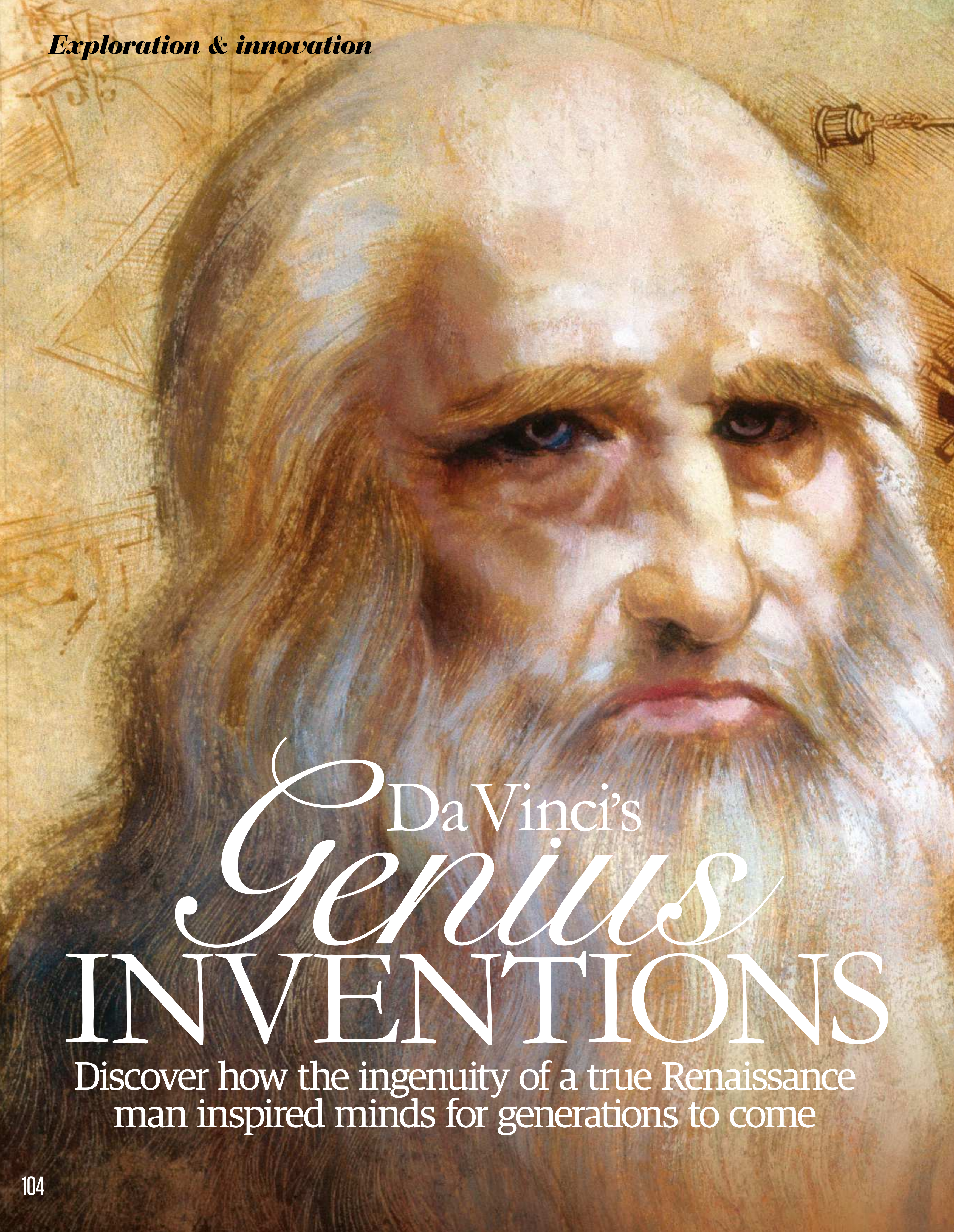
The influence of ancient thought is readily apparent in the *Oration On The Dignity Of Man* by Giovanni Pico della Mirandola, published in 1484. Mirandola's humanist writing contemplates ancient philosophical works along with conclusions that were relevant to his life and times. Among these were his assertion in direct contravention of Roman Catholic doctrine that individuals could commune directly with God rather than relying on priestly intercessors, possessed free will, and were capable of making decisions that directly affected their own destiny.

Mirandola was branded a heretic by the Church and avoided probable execution only through the intervention of Lorenzo de' Medici. However, his work shaped the basis of Protestant theology and contributed the coming of the Reformation.

In 1532, five years after the death of its author, Niccolò Machiavelli, the political essay titled *The Prince* was published. *The Prince* has stood the test of time, offering observations and advice on the consolidation and exercise of power. The work is considered one of the most influential in the history of modern political theory.

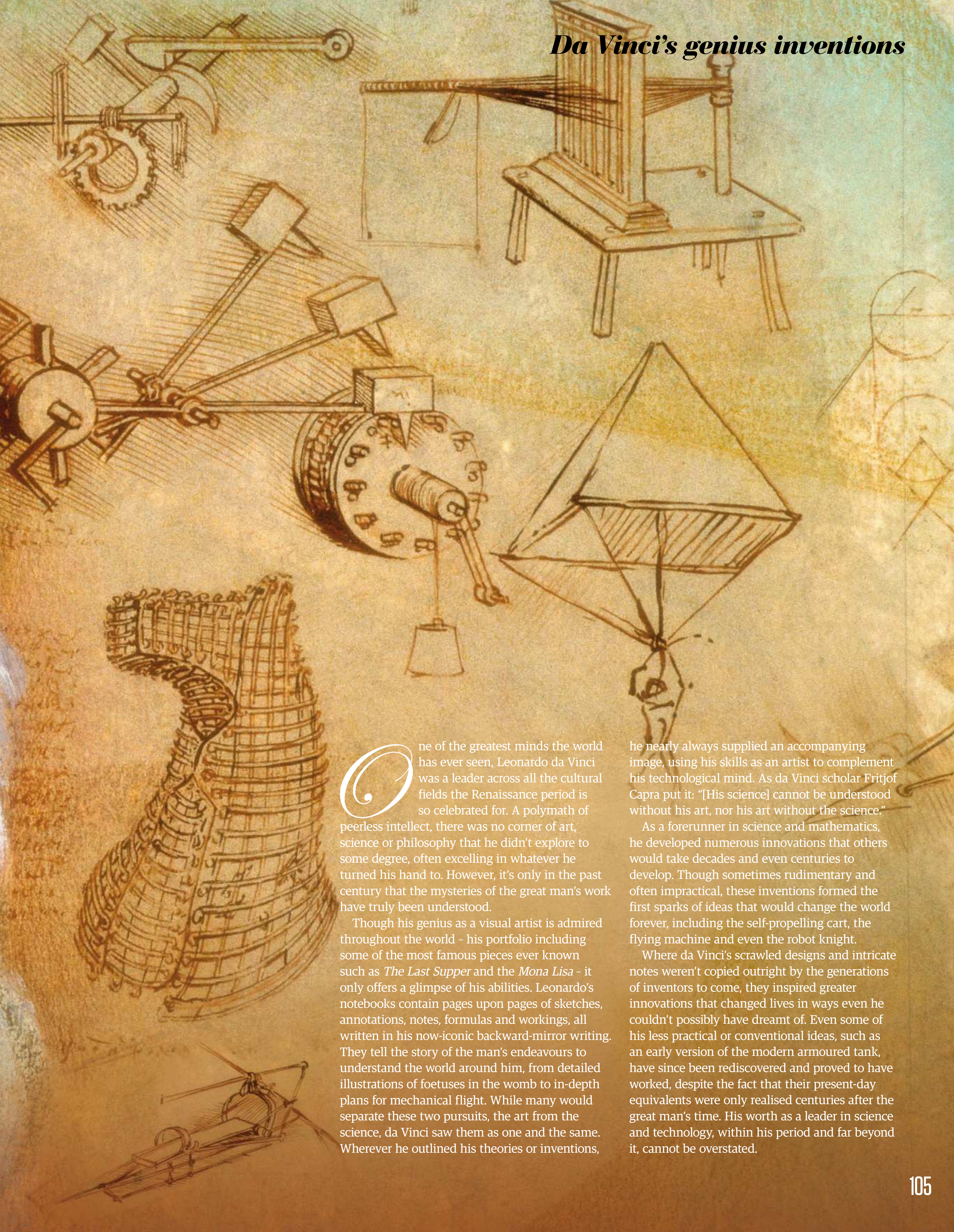
The Renaissance began in Italy and over the course of more than a century gradually spread throughout Europe. A towering figure of Western literature whose plays, sonnets, and other poetry were written primarily during the late 1500s, William Shakespeare developed complex characters of varied social classes, kings who were fallible, and commoners who demonstrate remarkable wisdom. His contribution of thousands of new words to the English language and the timeless themes and lessons conveyed reflect the embracing of humanist thought.

Mid-16th century French author Michel de Montaigne is considered the first great essayist, writing in a literary form that presents brief discussion of the author's perspective on a specific topic. *Don Quixote*, written by Spanish author Miguel de Cervantes and published between 1605 and 1615, is widely considered to be the first modern novel.



Da Vinci's *Genius* INVENTIONS

Discover how the ingenuity of a true Renaissance man inspired minds for generations to come



One of the greatest minds the world has ever seen, Leonardo da Vinci was a leader across all the cultural fields the Renaissance period is so celebrated for. A polymath of peerless intellect, there was no corner of art, science or philosophy that he didn't explore to some degree, often excelling in whatever he turned his hand to. However, it's only in the past century that the mysteries of the great man's work have truly been understood.

Though his genius as a visual artist is admired throughout the world - his portfolio including some of the most famous pieces ever known such as *The Last Supper* and the *Mona Lisa* - it only offers a glimpse of his abilities. Leonardo's notebooks contain pages upon pages of sketches, annotations, notes, formulas and workings, all written in his now-iconic backward-mirror writing. They tell the story of the man's endeavours to understand the world around him, from detailed illustrations of foetuses in the womb to in-depth plans for mechanical flight. While many would separate these two pursuits, the art from the science, da Vinci saw them as one and the same. Wherever he outlined his theories or inventions, he nearly always supplied an accompanying image, using his skills as an artist to complement his technological mind. As da Vinci scholar Fritjof Capra put it: "[His science] cannot be understood without his art, nor his art without the science."

As a forerunner in science and mathematics, he developed numerous innovations that others would take decades and even centuries to develop. Though sometimes rudimentary and often impractical, these inventions formed the first sparks of ideas that would change the world forever, including the self-propelling cart, the flying machine and even the robot knight.

Where da Vinci's scrawled designs and intricate notes weren't copied outright by the generations of inventors to come, they inspired greater innovations that changed lives in ways even he couldn't possibly have dreamt of. Even some of his less practical or conventional ideas, such as an early version of the modern armoured tank, have since been rediscovered and proved to have worked, despite the fact that their present-day equivalents were only realised centuries after the great man's time. His worth as a leader in science and technology, within his period and far beyond it, cannot be overstated.

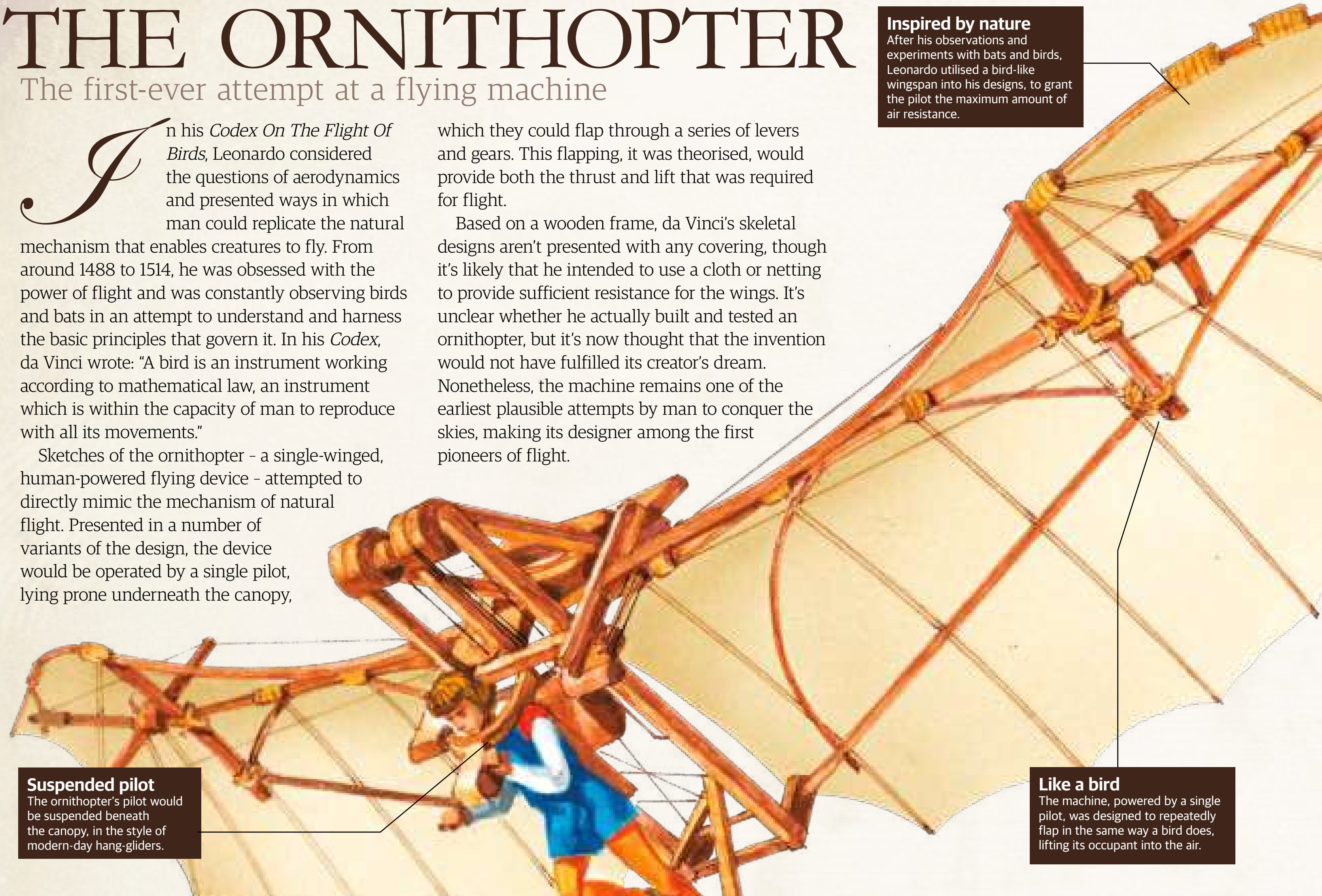
THE ORNITHOPTER

The first-ever attempt at a flying machine

In his *Codex On The Flight Of Birds*, Leonardo considered the questions of aerodynamics and presented ways in which man could replicate the natural mechanism that enables creatures to fly. From around 1488 to 1514, he was obsessed with the power of flight and was constantly observing birds and bats in an attempt to understand and harness the basic principles that govern it. In his *Codex*, da Vinci wrote: "A bird is an instrument working according to mathematical law, an instrument which is within the capacity of man to reproduce with all its movements."

Sketches of the ornithopter – a single-winged, human-powered flying device – attempted to directly mimic the mechanism of natural flight. Presented in a number of variants of the design, the device would be operated by a single pilot, lying prone underneath the canopy, which they could flap through a series of levers and gears. This flapping, it was theorised, would provide both the thrust and lift that was required for flight.

Based on a wooden frame, da Vinci's skeletal designs aren't presented with any covering, though it's likely that he intended to use a cloth or netting to provide sufficient resistance for the wings. It's unclear whether he actually built and tested an ornithopter, but it's now thought that the invention would not have fulfilled its creator's dream. Nonetheless, the machine remains one of the earliest plausible attempts by man to conquer the skies, making its designer among the first pioneers of flight.



Inspired by nature
After his observations and experiments with bats and birds, Leonardo utilised a bird-like wingspan into his designs, to grant the pilot the maximum amount of air resistance.

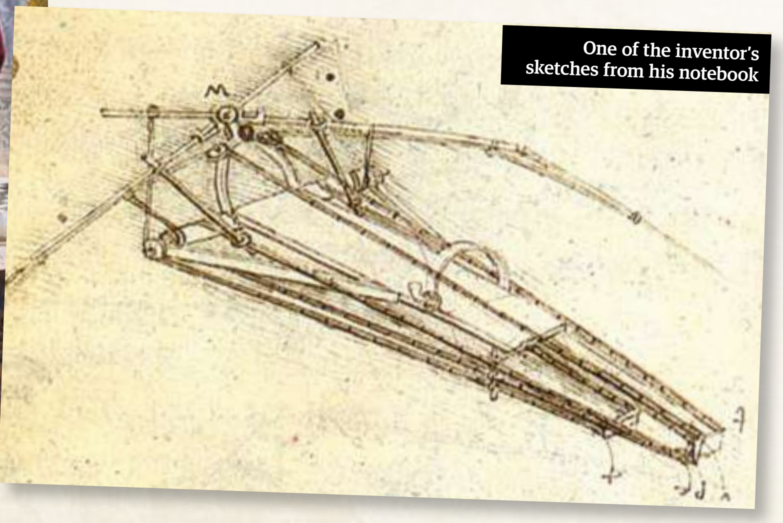
Suspended pilot
The ornithopter's pilot would be suspended beneath the canopy, in the style of modern-day hang-gliders.

Like a bird
The machine, powered by a single pilot, was designed to repeatedly flap in the same way a bird does, lifting its occupant into the air.

Pedal power
Da Vinci understood that a person would not be able to provide enough power for flight with their arms alone, so incorporated foot pedals into his designs to provide extra force.

> "The machine is one of the earliest plausible attempts by man to conquer the skies"

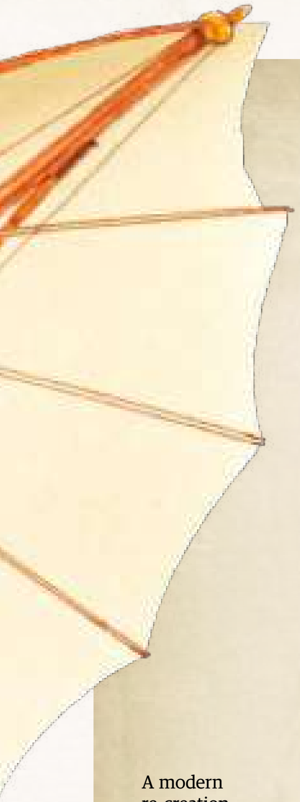
Though this attempt to master flight remains remarkable for its time, it is unlikely to have worked



One of the inventor's sketches from his notebook

Verdict

Ultimately a failure in terms of practicality. Da Vinci isn't likely to have ever seen his ornithopter successfully fly, and today experts have realised that based on his sketches, it almost certainly would have failed. However, the machine is the first step on the runway towards human flight, several centuries later. His understanding and incorporation of the natural world, as well as his sturdy grasp of physics, gave an edge to his designs that hadn't previously been seen.



THE SELF-PROPELLED CART

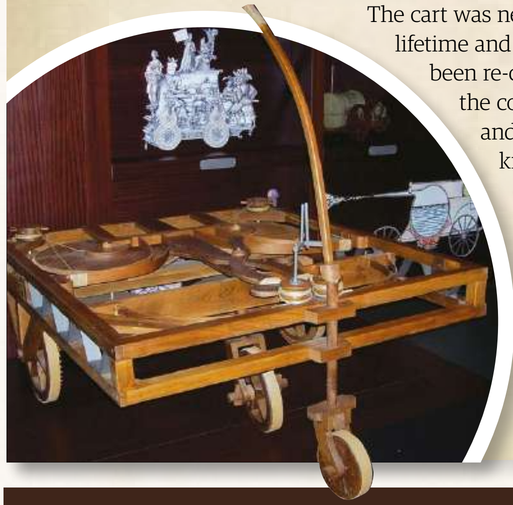
The world's first self-propelled vehicle

Despite predating combustion and steam technology by some centuries, da Vinci was able to design a fully working vehicle in around 1478 that could carry itself along without human assistance - possibly the earliest precursor to the modern automobile.

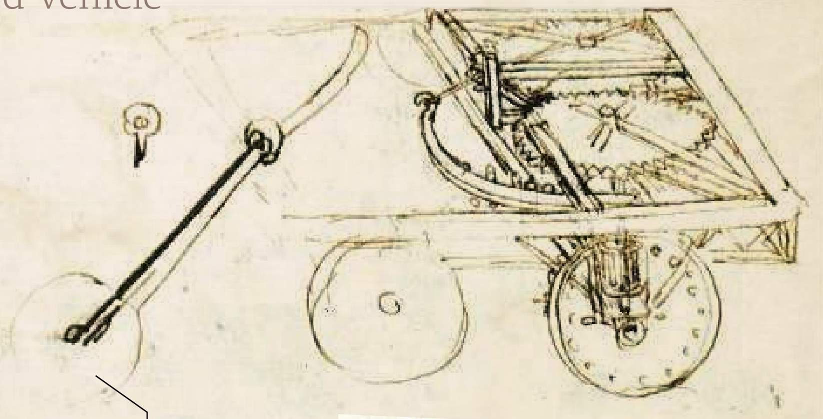
Based on a wind-up spring, much like a child's clockwork toy, the wheels of the cart had to be moved in reverse repeatedly, priming the strong springs before releasing the device. The cart was even intended to be programmable - by placing wooden blocks between the vehicle's gears the operator could determine when it would turn at a certain angle, making it appear to any onlookers as though it were choosing the direction itself.

It's thought that da Vinci only envisioned the cart to be used as a spectacle, for the amusement of crowds rather than any other practical purpose. The fact the frame features no seat for a driver or passenger suggests he hadn't considered its use as a means of transportation.

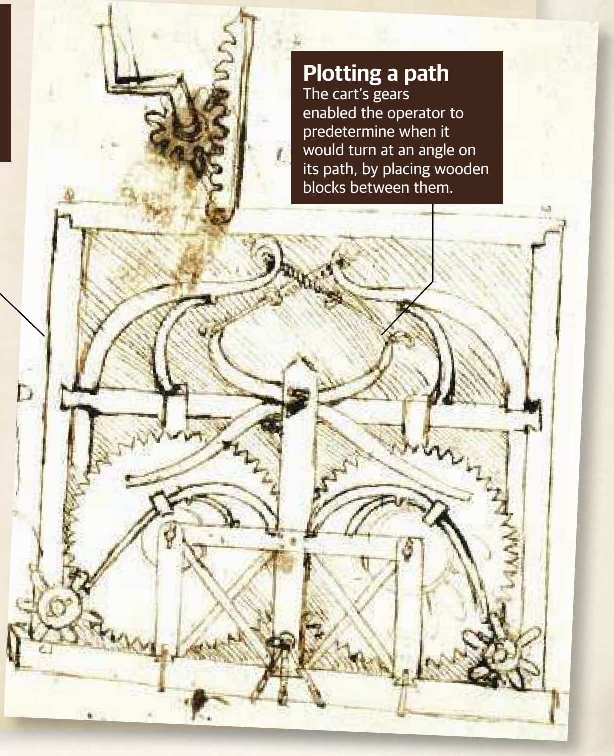
The cart was never built during his lifetime and has only recently been re-created. Given the correct resources and time, there's no knowing how far he could have taken his cart, but by thinking outside of his own time he was pre-empting a vision of modern life beyond anything he could imagine.



A modern re-creation of the self-propelled cart



Wind-up mechanics
The spring mechanism powering the cart would be primed by turning the wheels in reverse, just like a child's clockwork toy.



Short journey
The cart would have been able to travel for around 40m (130ft) before eventually running out of energy and curiously only able to turn right.

Plotting a path
The cart's gears enabled the operator to predetermine when it would turn at an angle on its path, by placing wooden blocks between them.

Verdict

If it was realised just what an innovation had been conceived, it's possible da Vinci would have given his cart a grander stage than frivolous carnivals. Though his cart was unrefined and still many miles away from a modern-day motor vehicle, the mechanics that gave it life were revolutionary.

THE BALL BEARING

The tiny invention that makes a big impact

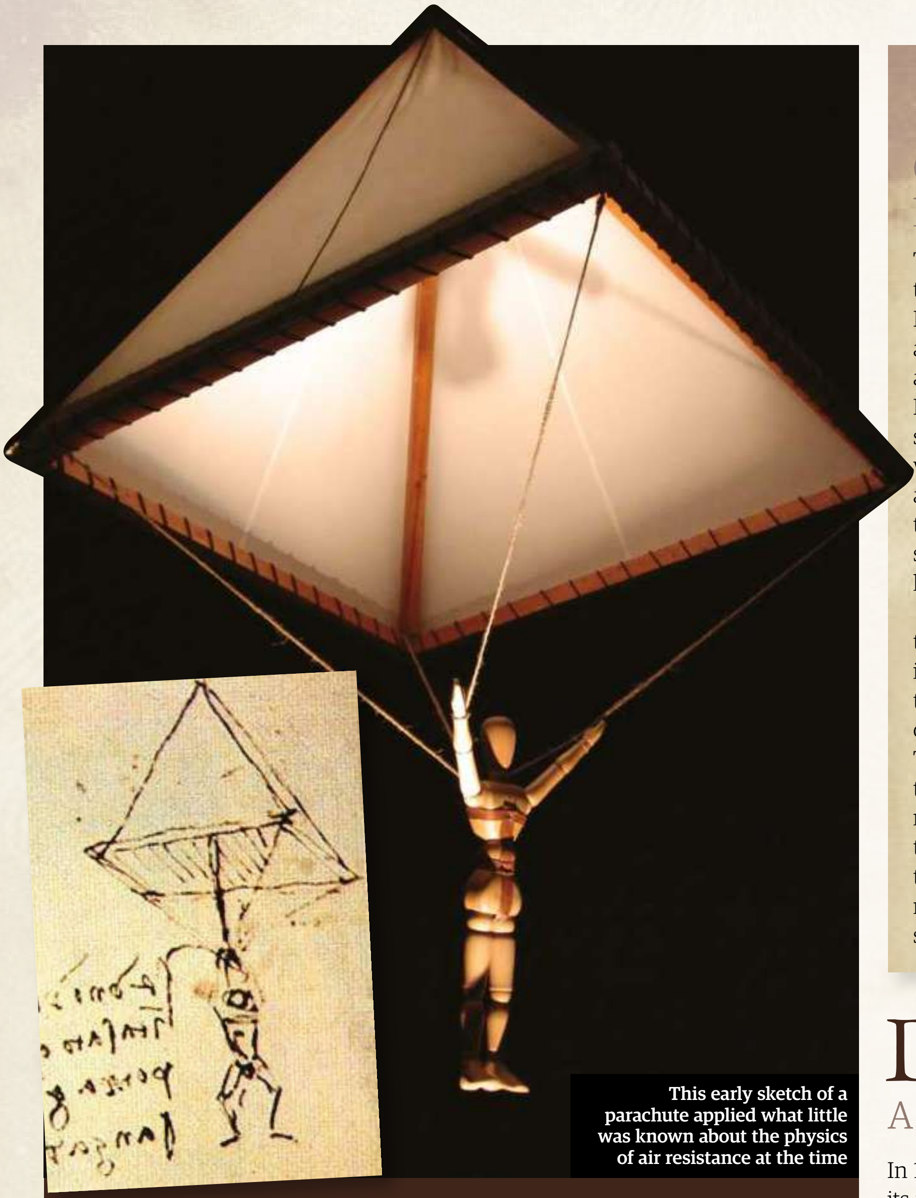
Though they seem innocuous, ball bearings are essential components in a whole range of machines. When considering how best to reduce friction between two moving surfaces, in order to increase the speed at which they could rotate, da Vinci sketched out several uses of tiny balls within a mechanism. He intended to apply this concept to his helicopter, using the limited friction of the balls to increase the propeller's rotation speed.

Ball bearings are widely used today in practically any device with parts that require a high-speed rotation.

Verdict

The fact that the ball bearing is still being used more or less exactly as its creator envisioned is testament enough to both the man and his invention. Though the small component wasn't quite enough to save its creator's flying ambitions, it stands as one of his most important inventions.

Da Vinci sketched several solutions for reducing the friction between two moving parts, concluding that the ball shape was the most practical



This early sketch of a parachute applied what little was known about the physics of air resistance at the time

THE PARACHUTE

An early attempt to fall to Earth safely

In a margin of his notes, da Vinci sketched a small figure grasping a triangle-shaped construction. He commented that with enough linen cloth arranged across the frame, a man could "jump from any great height whatsoever without injury."

Though his design was later studied and adapted by several inventors, the modern-day ripcord parachute, developed in the early-20th century, bears little resemblance to his sketch. However, his clear understanding of the principles that would enable a person to fall safely back to Earth, applying his knowledge of aerodynamics and air resistance, stood the test of time as an example to those who would follow him. Some 500 years later his device was actually built and was proved to work, though the weight of the frame would certainly have caused problems when landing.

Verdict

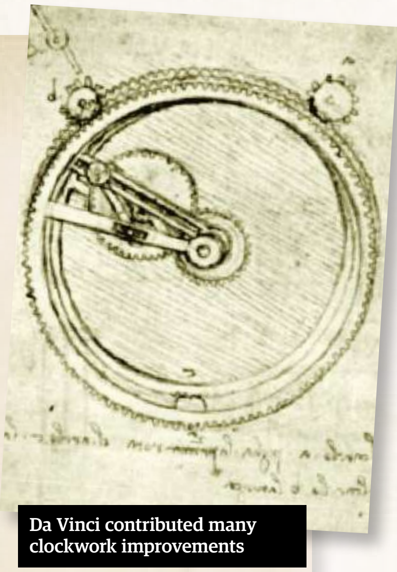
It's the theory and thought behind the invention of the parachute, rather than the device itself, that deserves the accolades. A successful modern-day test of the inventor's concept only confirmed his genius.

CLOCKS

Genius time-keeping ideas

Though he can't be credited with the invention of the clock, the Renaissance man contributed great advancements towards ever-more accurate and reliable mechanisms. During the 15th century, clockmakers started to use springs rather than weights as a measuring device and in around 1490, da Vinci adopted this concept to introduce two separate mechanisms, one each for hours and minutes.

He is credited with being among the first inventors to include a fusee in his clock designs, a conical pulley that serves to balance out the pull of the main chain as it winds down. This resulted in far more accurate timekeeping. He also developed a rudimentary alarm clock, based on the flow of water from one container to another, with a series of pulleys raising the inventor's legs at the stroke of a clock.



Da Vinci contributed many clockwork improvements

Verdict

This more-accurate and innovative design contributed much to time-keeping. A fundamental understanding of clockworks, also applied to many of his other different inventions, meant da Vinci had given the world another advancement that in part keeps us all on time today.

DIVING SUIT

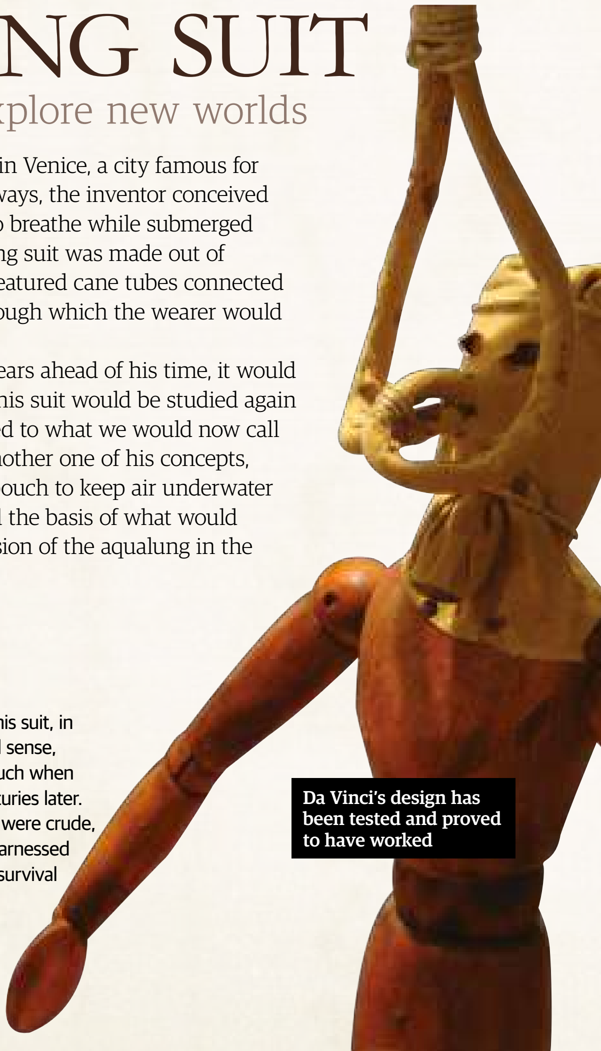
A tool to explore new worlds

In 1499, while living in Venice, a city famous for its network of waterways, the inventor conceived a way for a human to breathe while submerged underwater. His diving suit was made out of pigskin leather and featured cane tubes connected to a floating bell, through which the wearer would be able to breathe.

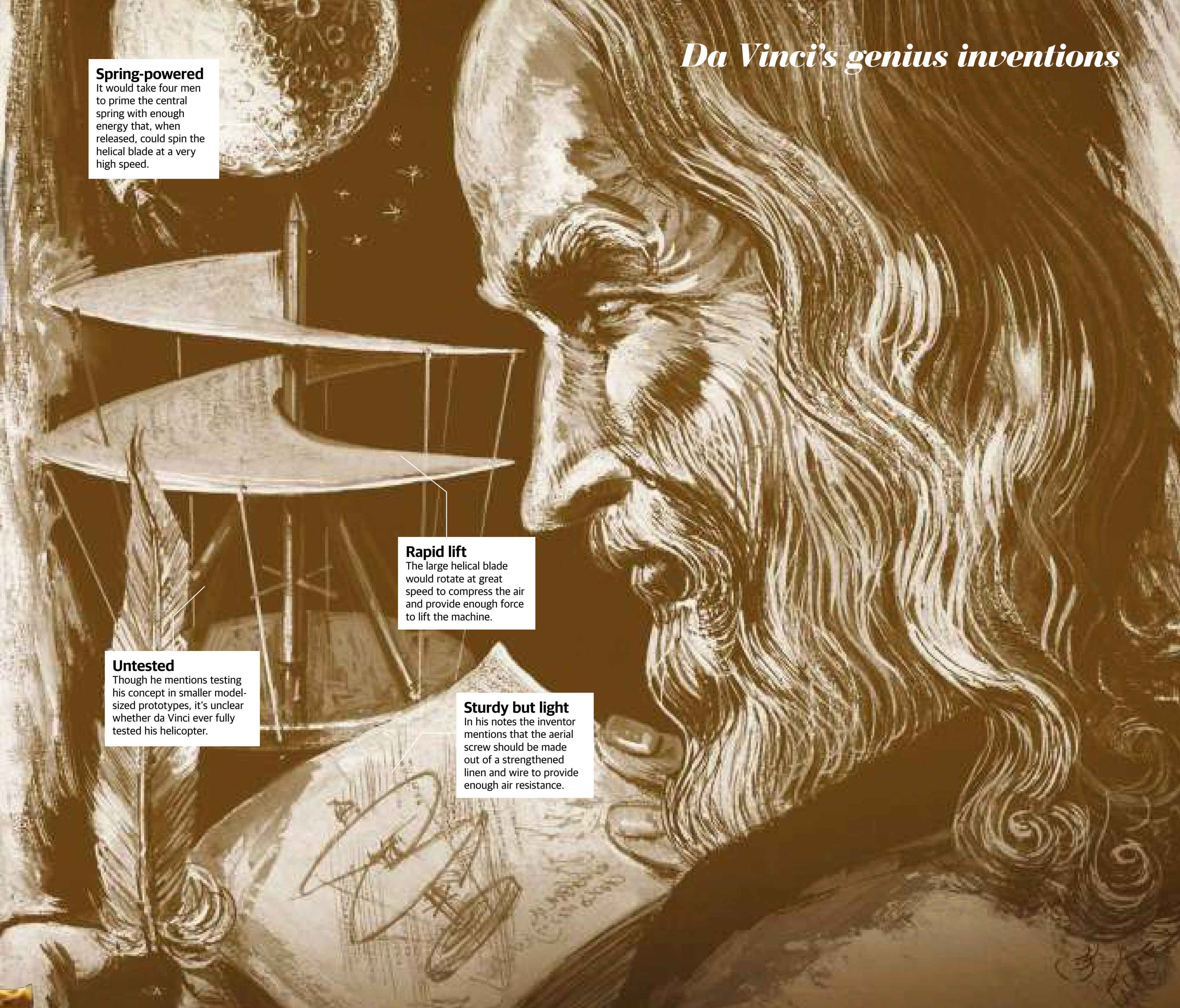
Once again light years ahead of his time, it would be centuries before this suit would be studied again and further developed to what we would now call scuba equipment. Another one of his concepts, the use of a leather pouch to keep air underwater for breathing, formed the basis of what would become an early version of the aqualung in the 19th century.

Verdict

The early design of this suit, in its most fundamental sense, would not change much when it was replicated centuries later. Though his materials were crude, da Vinci's aqualung harnessed the basics of human survival while submerged.



Da Vinci's design has been tested and proved to have worked



Spring-powered
It would take four men to prime the central spring with enough energy that, when released, could spin the helical blade at a very high speed.

Rapid lift
The large helical blade would rotate at great speed to compress the air and provide enough force to lift the machine.

Untested
Though he mentions testing his concept in smaller model-sized prototypes, it's unclear whether da Vinci ever fully tested his helicopter.

Sturdy but light
In his notes the inventor mentions that the aerial screw should be made out of a strengthened linen and wire to provide enough air resistance.

THE HELICOPTER

A precursor to the modern-day vehicle

It may seem unconventional to modern eyes, but this design is the earliest known plan for a human-powered helicopter. Utilising a screw-shaped propeller, the machine featured a powerful loaded spring to harness and release enough energy to spin the winding blade and lift it into the air.

The aerial screw, as it is more commonly known, would have required four men to fully prime the powerful spring, though it's unclear whether they would have remained on the device as it was propelled into the air. As the spring was released, it would turn the blades of the screw at high speed, compressing the air below it to provide sufficient lift from the ground – a method similar to today's vehicles. It's thought that da Vinci had tested the concept for the device on smaller models, but a full-scale prototype, purportedly to be made of linen and iron wire, was likely never built. Like his other proposals, the aerial screw would have been far too heavy to fly.

Once again, da Vinci applied his knowledge of aerodynamics and air resistance in his quest to achieve practical flight – he even invented the ball bearing to overcome the friction his device would encounter. When his notes were published nearly three centuries later, his observations and designs inspired a new generation of aerial pioneers, though the modern-day helicopter wouldn't be built until the 20th century.

> "His designs inspired a new generation of aerial pioneers"

Verdict

Much like the ornithopter, the helicopter was a doomed design, but with a brilliant method. Utilising some of the principles developed by his fellow polymath Archimedes some centuries earlier, the Italian's combination of the spring and screw applies his intimate understanding of lift, drag and aerodynamics.

THE MACHINE GUN

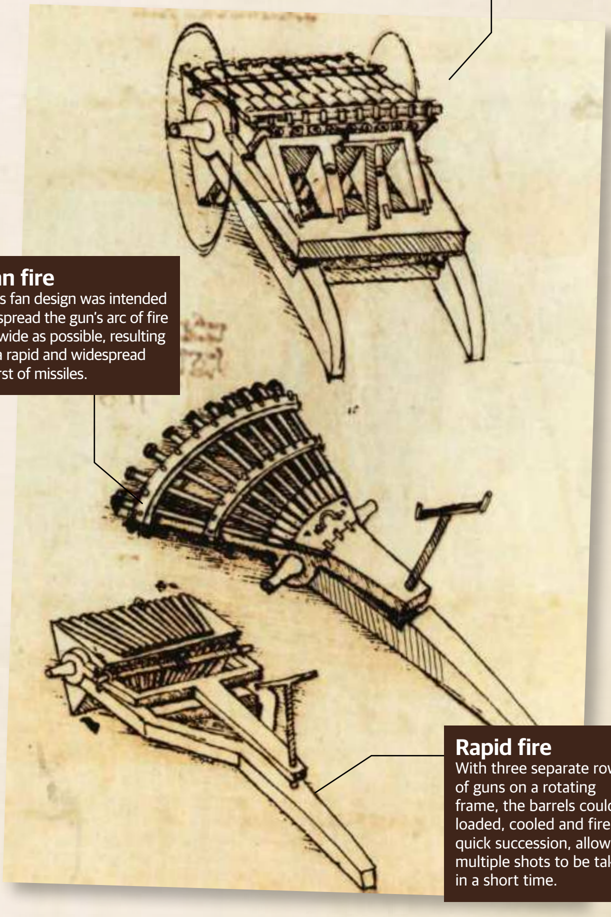
A rapid-fire weapon designed to cause carnage on the battlefield

Gunpowder weapons gained greater prominence on battlefields throughout the Renaissance period, gradually becoming more accurate as models were refined and improved. Da Vinci conceived many of his now-famous weapons of war while under the patronage of Ludovico Sforza, the Duke of Milan, who sought to gain the upper hand over his enemies in battle. Italy in this period wasn't the unified country we know today, but rather a series of individual city states in bitter rivalry with one another. These cities were also at constant threat from nation states, meaning that conflict and war were never far from people's minds, so new weapons were in constant development.

He saw the long period of time it took to prepare and reload a cannon as a major flaw in its effectiveness in battle, so drew up designs of guns featuring several barrels that could be reloaded quickly. He designed and produced a range of gun prototypes featuring breech-loading barrels, meaning the operator wouldn't have to walk around the front of the gun to load it, which was dangerous and time-consuming.

One of his designs features three separate, rotating rows of 11 barrels that could be fired, loaded and cooled in quick succession, dramatically speeding up the rate of fire. Another sketch features a fan-like layout, spreading several barrels in an arc that could devastate enemy ranks if fired at once or in rapid succession, something unseen in the world up until that point.

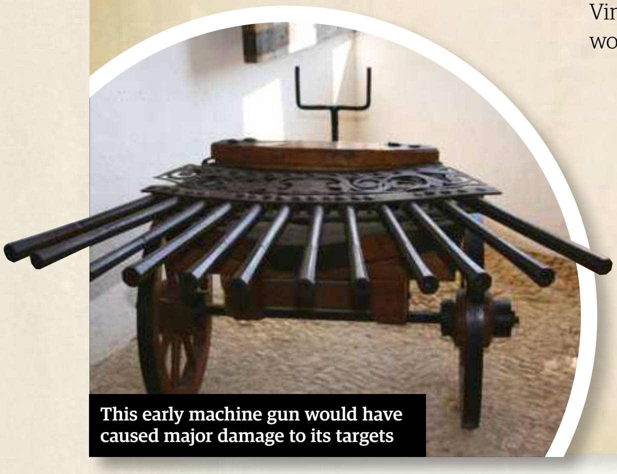
While these innovations aren't machine guns in our modern understanding, they signalled the beginning of a new age of warfare. Though a pacifist at heart, da Vinci had codified a killing machine that would change the face of war.



Breech-loading
By using a breech-loading design, da Vinci had almost halved the time it took to reload and fire the cannon.

Fan fire
This fan design was intended to spread the gun's arc of fire as wide as possible, resulting in a rapid and widespread burst of missiles.

Rapid fire
With three separate rows of guns on a rotating frame, the barrels could be loaded, cooled and fired in quick succession, allowing multiple shots to be taken in a short time.



This early machine gun would have caused major damage to its targets

Verdict

Though a pacifist at heart, this terrible invention signals da Vinci's capitulation to pursuing one of humanity's grimmer aspirations: more effective and terrible means for murder. Identifying all the problems that made cannons so impractical, such as slow reloading and overheating, the inventor had advanced a device decades into the future.

> "Da Vinci had codified a killing machine that would change the face of war"

THE ROBOT KNIGHT

An intricate contraption to delight and astound

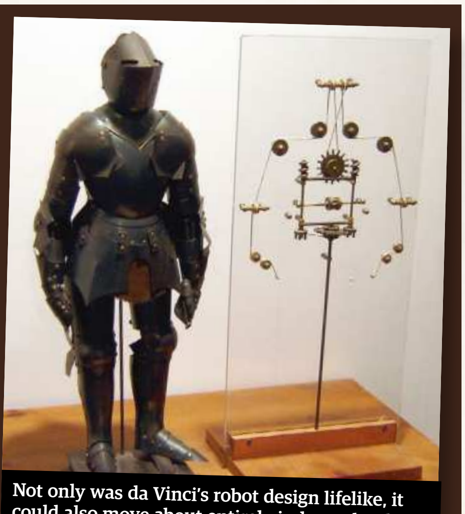
Today, we may be developing robots with ever-increasing levels of artificial intelligence and flexibility, but these are only the latest incarnations of the automaton, invented by Leonardo some 500 years ago. It is believed he first thought of his invention in 1495.

This robot, with the external appearance of a Germanic knight, contained two separate operating systems of gears and pulleys, each capable of several degrees of movement. The knight was able to sit, stand and even raise its visor. Da Vinci's thorough understanding of human anatomy certainly helped him produce such a lifelike creation.

The notes on the automaton were so cryptic it's only relatively recently that engineers, most notably robotics expert Mark Rosheim, have been able to decipher and follow his plan, which have in fact directly influenced modern-day robot designs for NASA.

Verdict

There is perhaps no better example of the polymath's mastery, of both the fields of art and science, than the automaton. Again only used as an amusing trifle for his peers, it's a shame that the great inventor would certainly never have guessed what brilliant machines his design would inspire.



Not only was da Vinci's robot design lifelike, it could also move about entirely independently

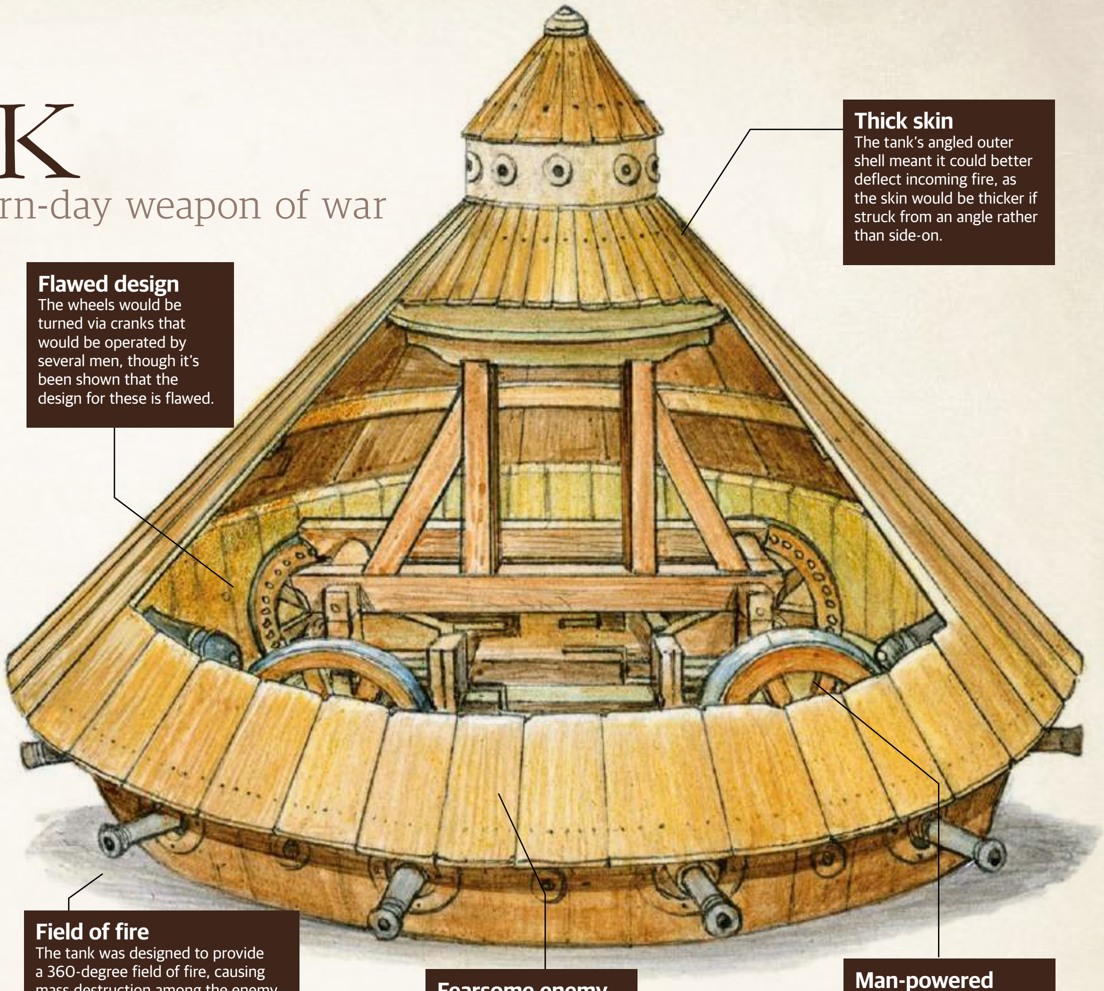
THE TANK

An early example of a modern-day weapon of war

It may look like a work of fantasy, but this is perhaps the earliest example of an armoured vehicle. During the Renaissance, warfare was changing rapidly, as states were striving to gain the upper hand in battle.

This sketch of a reinforced, armed vehicle is just one of da Vinci's many designs produced to change how battles were fought. It features an angular outer shell, encasing a set of four wheels and several cannons pointing out of the machine, which would be driven by several men turning the cranks of the wheels, positioning the vehicle toward the enemy before opening fire.

This early tank has caused controversy due to a very basic flaw in its design. The cranks used to turn the wheels, if built to the specifications in da Vinci's sketches, would act against each other, making the machine impossible to move. It's been suggested that such a flaw would not have gone unnoticed by such a perfectionist and that he included the mistake so his deadly vision could never be used. Still, this design shows how his artistic vision was operating far beyond his own time, realised hundreds of years later when metal tanks would rumble across the muddy battlefields of WWI and change the face of modern warfare.



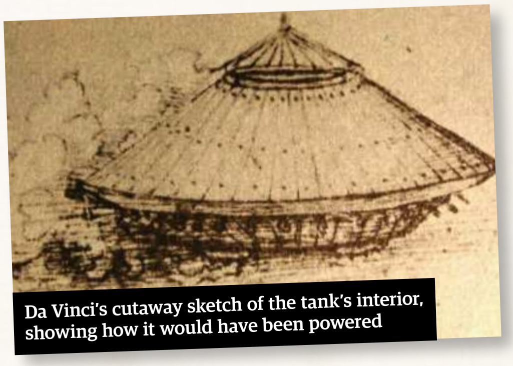
Thick skin
The tank's angled outer shell meant it could better deflect incoming fire, as the skin would be thicker if struck from an angle rather than side-on.

Flawed design
The wheels would be turned via cranks that would be operated by several men, though it's been shown that the design for these is flawed.

Field of fire
The tank was designed to provide a 360-degree field of fire, causing mass destruction among the enemy ranks, while also risking friendly fire.

Fearsome enemy
The tank would have been able to move in any direction, providing an intimidating, if slow and cumbersome, opponent on the battlefield.

Man-powered
Though he considered using horses to power the machine, the inventor felt they might become too unpredictable when confined within the tank, so opted for man-power.



Da Vinci's cutaway sketch of the tank's interior, showing how it would have been powered

Verdict

With modern eyes this contraption seems nothing like the tanks that roam today's battlefields so effectively, and its total lack of practical application compounds its failure. However, working with the tools available to him, da Vinci's vision is a truly terrifying vision of man's desire for destruction.

> "Despite its deadly potential as a formidable weapon of war, this early tank has caused controversy"

LEONARDO'S INFLUENCES

The peers and patrons of the great inventor

DEL VERROCCHIO

Among the finest Florentine artists of the 15th century, del Verrocchio tutored the young da Vinci. Leonardo is even thought to have made significant additions and changes to some of his master's works, including the famous *Baptism of Christ*.

MICHELANGELO

Michelangelo's contribution to Renaissance art, most famously the ceiling of the Sistine Chapel in the Vatican, cannot be overstated. The two crossed paths while living and working in Florence at the beginning of the 16th century.

LUDOVICO SFORZA

During the 1490s, after his ascension to the dukedom of Milan, Sforza continued to patronise da Vinci, who had been living and working in the city for several years. The duke commissioned many of da Vinci's military designs to aid him in his wars.

FRANCESCO MELZI

Melzi was among da Vinci's most accomplished students and accompanied him in France during his final years. As well as the executor of da Vinci's will and his principal heir, Melzi is credited with one of the most famous portrait sketches of da Vinci as an elderly man.

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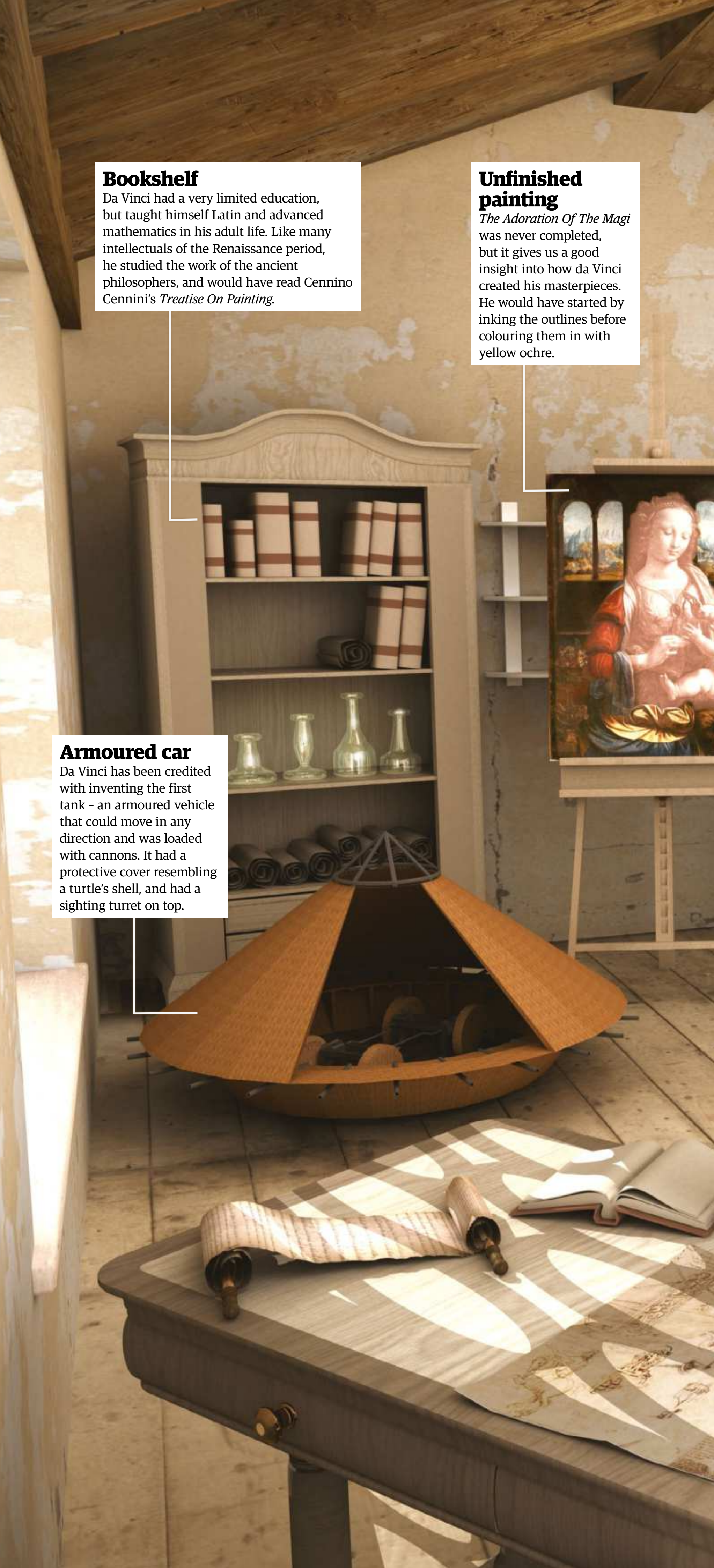
Da Vinci's workshop

Back once again for the renaissance master, 1478-1482, Italy

The Renaissance was a time powered by innovation, rational thought and a return to classical art and learning. At its heart was the city of Florence, and in this city lived one of the greatest artists the world has ever known: Leonardo da Vinci. His *Mona Lisa* is the single most visited piece of museum art on record, and *The Last Supper* has inspired countless stories and films alike, but so much about this genius of the 15th century remains a mystery. Many of his designs for inventions, such as his flying machine, went unrealised, and despite making several important scientific discoveries, he never published them. No one knows exactly what his workshop looked like, but we can get a good idea based on what he said and did.

> "Artists, philosophers, scientists and writers flocked to Florence to enjoy a political system that was dedicated to the welfare of the city "

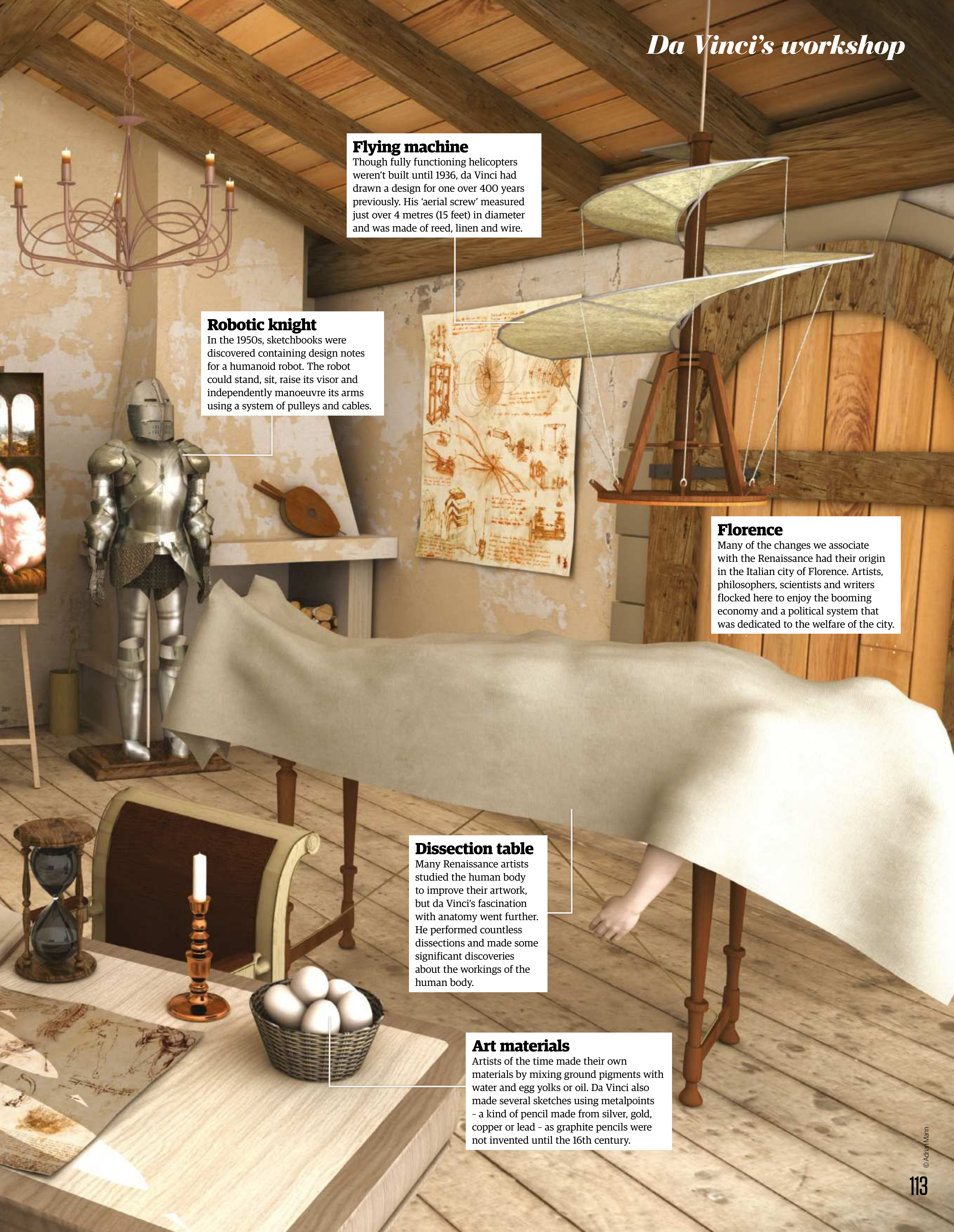


Bookshelf
Da Vinci had a very limited education, but taught himself Latin and advanced mathematics in his adult life. Like many intellectuals of the Renaissance period, he studied the work of the ancient philosophers, and would have read Cennino Cennini's *Treatise On Painting.*

Unfinished painting
The Adoration Of The Magi was never completed, but it gives us a good insight into how da Vinci created his masterpieces. He would have started by inking the outlines before colouring them in with yellow ochre.

Armoured car
Da Vinci has been credited with inventing the first tank – an armoured vehicle that could move in any direction and was loaded with cannons. It had a protective cover resembling a turtle's shell, and had a sighting turret on top.

Da Vinci's workshop



Flying machine
Though fully functioning helicopters weren't built until 1936, da Vinci had drawn a design for one over 400 years previously. His 'aerial screw' measured just over 4 metres (15 feet) in diameter and was made of reed, linen and wire.

Robotic knight
In the 1950s, sketchbooks were discovered containing design notes for a humanoid robot. The robot could stand, sit, raise its visor and independently manoeuvre its arms using a system of pulleys and cables.

Florence
Many of the changes we associate with the Renaissance had their origin in the Italian city of Florence. Artists, philosophers, scientists and writers flocked here to enjoy the booming economy and a political system that was dedicated to the welfare of the city.

Dissection table
Many Renaissance artists studied the human body to improve their artwork, but da Vinci's fascination with anatomy went further. He performed countless dissections and made some significant discoveries about the workings of the human body.

Art materials
Artists of the time made their own materials by mixing ground pigments with water and egg yolks or oil. Da Vinci also made several sketches using metalpoints – a kind of pencil made from silver, gold, copper or lead – as graphite pencils were not invented until the 16th century.

© Adrian Mann

Written by
Derek Wilson

The thirst for scientia

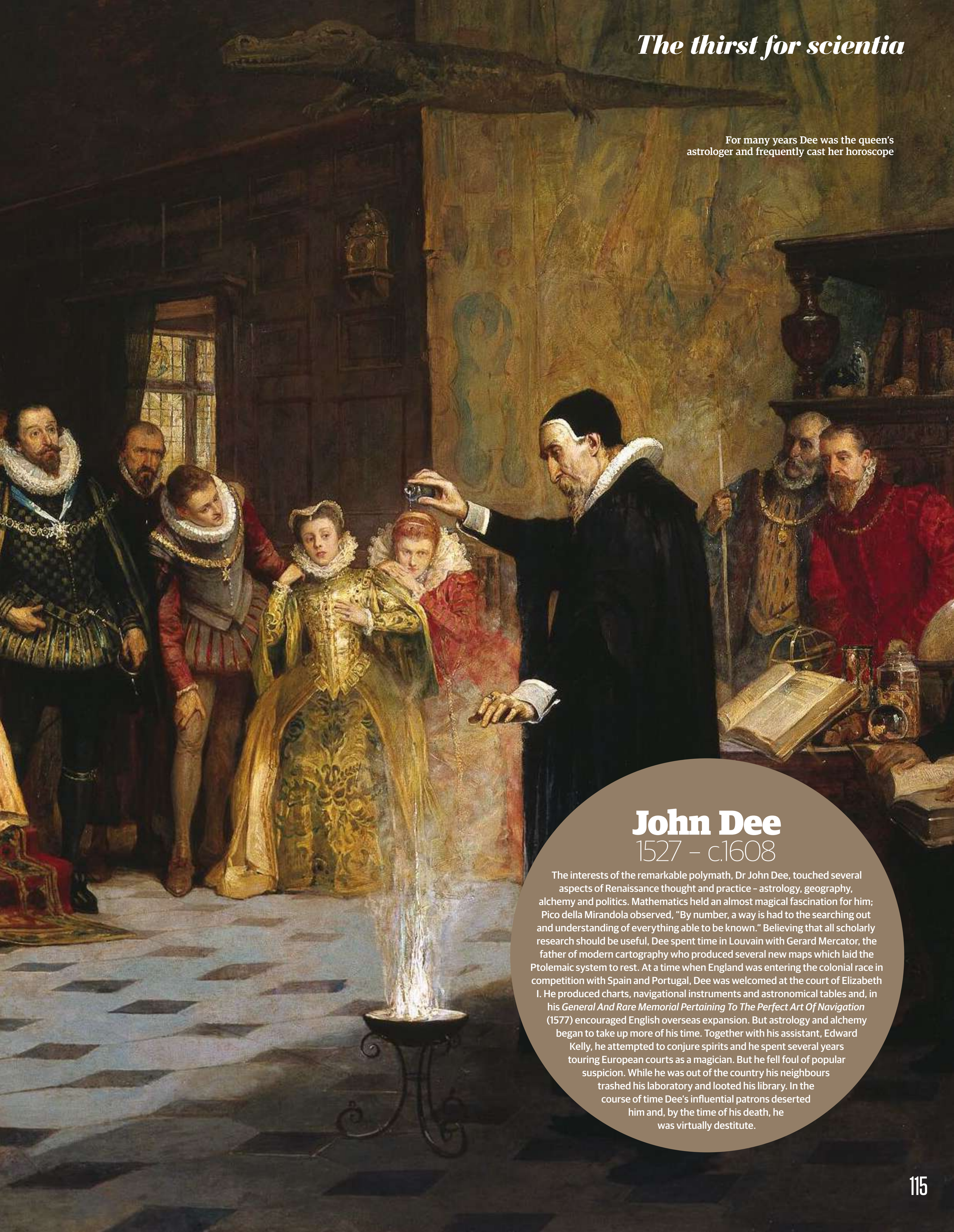
During the Renaissance, mariners began to discover the size of their planet and scholars began to speculate about its location in space

In the closing years of the 15th century, the question that was exciting and intriguing thinking Europeans was, 'What is this 'Earth' on which we are standing?'. Within a single decade, 1492-1502, knowledge of the planet had been revolutionised. Before that all geography was based on the *Geographia* written by Claudius Ptolemy in the 2nd century CE. It mapped the Roman world as it was known at the time from the eastern fringe of China to the Canary Islands. Ptolemy knew (contrary to common legend) that the Earth was a sphere but the 'missing' three quarters was inaccessible without ships able to cross the Atlantic or circumnavigate the landmass of Africa. In this remarkable decade, Christopher Columbus explored the West Indies and Central America; Pedro Cabral landed in Brazil; John and Sebastian Cabot found the coast of North America; and Vasco da Gama rounded the Cape of Good Hope and went on to establish a trading colony in India. By 1522, the first Europeans had sailed right round the world.

This opened up hitherto undreamed of opportunities for trade, colonization and exploitation of the resources of distant lands. It also presented challenges to astronomers, mathematicians and inventors. There was a sudden demand for charts, maps and navigational instruments. One of those who shared the new interest in the study of the movements of heavenly bodies was Nicolaus Copernicus (1473-1543), a minor Church official. This polymath, who had collected qualifications in major disciplines from various universities, had a passion for mathematics and astronomy. He applied his formidable mind to solving one of the biggest problems facing scholars over many centuries.

Conventional thinking about the universe was based on Ptolemy's *Almagest*, which placed the Earth at the centre, with the Moon, Sun, nearer planets and distant heavenly bodies revolving around it in concentric circles. By means of painstaking observations and calculations, Ptolemy had provided tables for calculating the position of the planets at any given time. The problem was that not all the gathered data agreed with planetary motions that were actually observed. Copernicus now gave his attention to another ancient theory, that the Sun was the centre of the universe and everything else, including the Earth, revolved round it. He acknowledged that this 'heliocentric' theory did not solve everything but suggested that it was more plausible than Ptolemy's 'geocentric' theory. The book detailing his findings, *De Revolutionibus Orbium Coelestium*, was published shortly after his death.

Opponents offered several objections. Some said that the idea of Earth spinning through

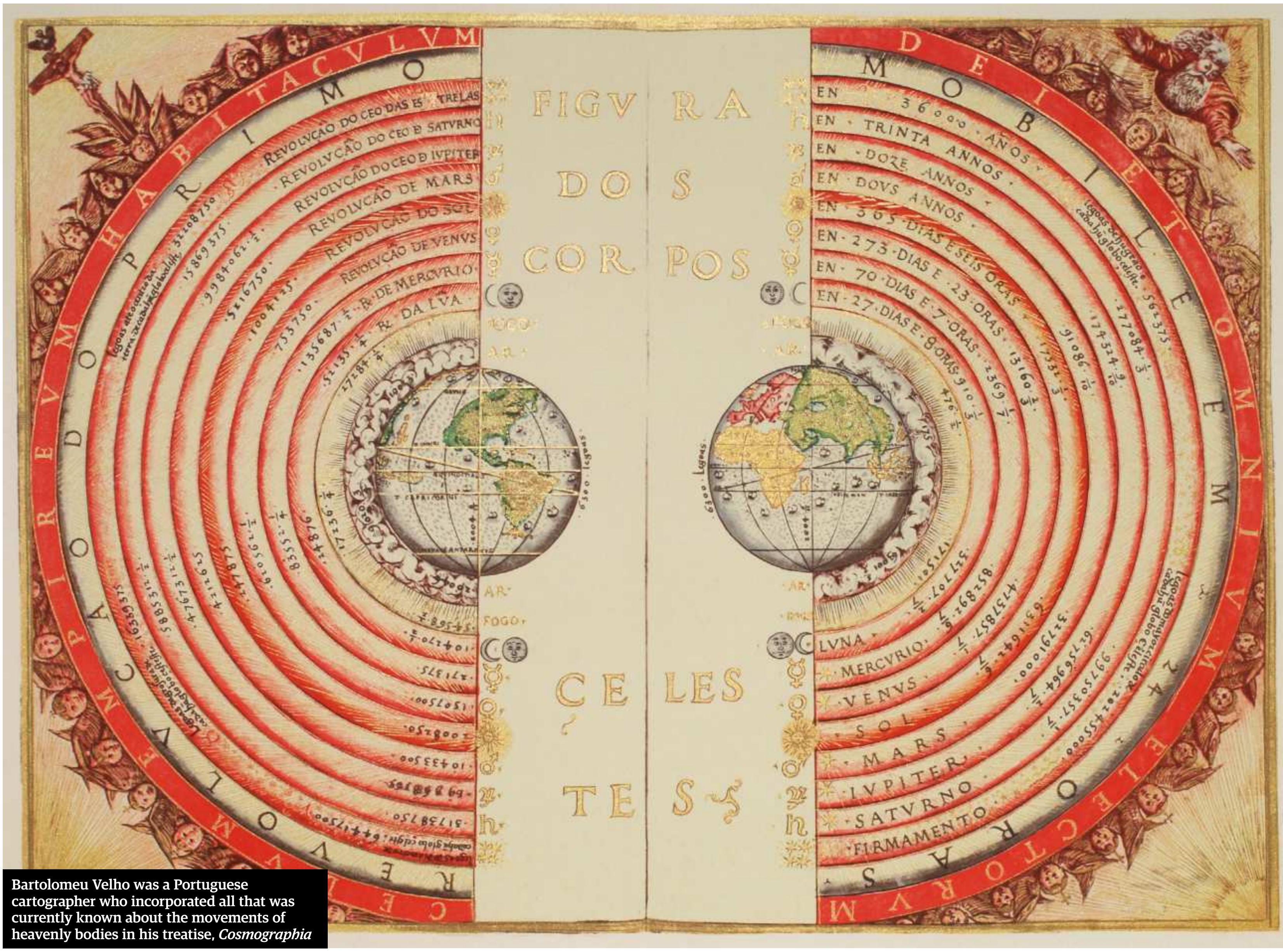


For many years Dee was the queen's astrologer and frequently cast her horoscope

John Dee

1527 – c.1608

The interests of the remarkable polymath, Dr John Dee, touched several aspects of Renaissance thought and practice – astrology, geography, alchemy and politics. Mathematics held an almost magical fascination for him; Pico della Mirandola observed, "By number, a way is had to the searching out and understanding of everything able to be known." Believing that all scholarly research should be useful, Dee spent time in Louvain with Gerard Mercator, the father of modern cartography who produced several new maps which laid the Ptolemaic system to rest. At a time when England was entering the colonial race in competition with Spain and Portugal, Dee was welcomed at the court of Elizabeth I. He produced charts, navigational instruments and astronomical tables and, in his *General And Rare Memorial Pertaining To The Perfect Art Of Navigation* (1577) encouraged English overseas expansion. But astrology and alchemy began to take up more of his time. Together with his assistant, Edward Kelly, he attempted to conjure spirits and he spent several years touring European courts as a magician. But he fell foul of popular suspicion. While he was out of the country his neighbours trashed his laboratory and looted his library. In the course of time Dee's influential patrons deserted him and, by the time of his death, he was virtually destitute.


FIGVRA DOS CORPOS CELESTES
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REVOLVCÃO DE VENVS
R. DE MERCVRIO
R. DA LVA
EN 36000 ANOS
EN TRINTA ANNOS
EN DOZE ANNOS
EN DOVS ANNOS
EN 365 DIAS E SEIS ORAS
EN 273 DIAS E 23 ORAS
EN 70 DIAS E 7 ORAS
EN 27 DIAS E 8 ORAS
FOGO
AR
LVNA
MERCVRIO
VENVS
SOL
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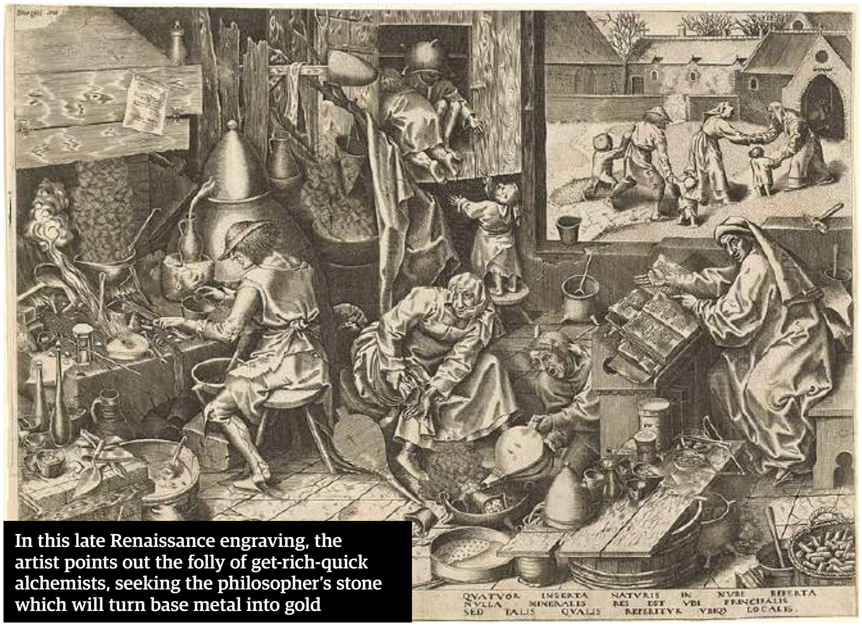
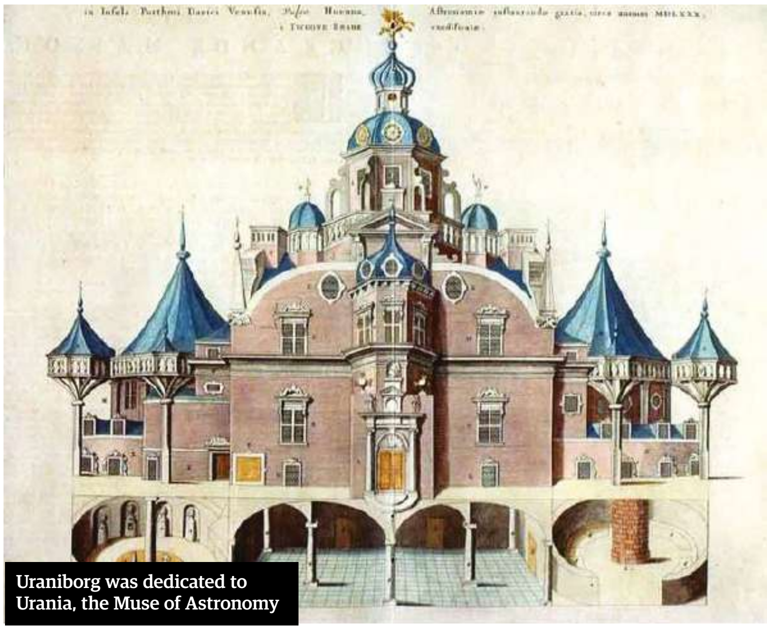
FIRMAMENTO

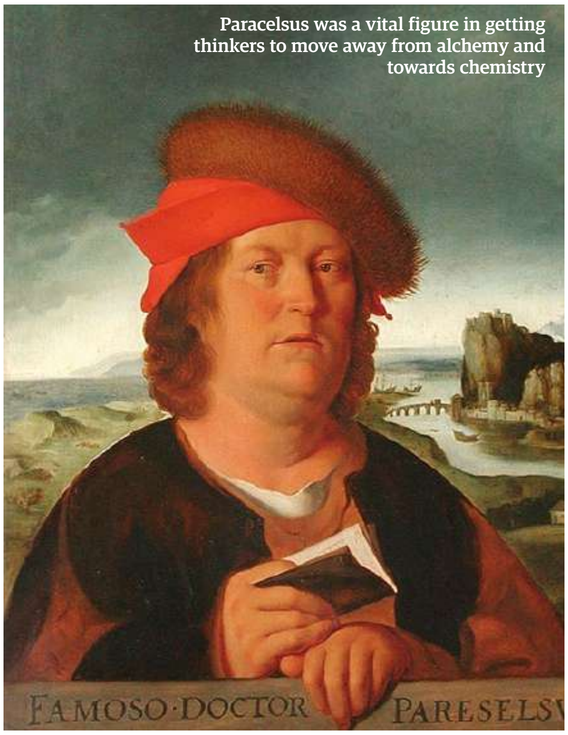
Bartolomeu Velho was a Portuguese cartographer who incorporated all that was currently known about the movements of heavenly bodies in his treatise, *Cosmographia*


QVATVOR INSERTA NATVRIS IN NVBE REPERTA
NVLLA MINERALIS RES EST VBI PRINCIPALIS
SED TALIS QVALIS REPERITVR VBIQ LOCALIS.

In this late Renaissance engraving, the artist points out the folly of get-rich-quick alchemists, seeking the philosopher's stone which will turn base metal into gold

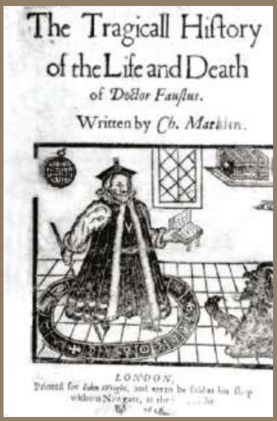


Uraniborg was dedicated to Urania, the Muse of Astronomy



Paracelsus was a vital figure in getting thinkers to move away from alchemy and towards chemistry

Devilish deals



The Tragicall Hiſtory
of the Life and Death
of Doctor Fauſtus.
Written by Ch. Marklin.

LONDON,

The thirst for knowledge (*scientia*) which drove the Renaissance posed ethical and spiritual problems. The exploration of other religions and philosophies were seen by some Church leaders as bringing Christian truth into question. More dangerous, however, was the study and practice of magic. Some scholars (or magi) went beyond astrology and attempted to make contact with beings of the heavenly realm. It was, then, a short step to harnessing the power of such contacts to control terrestrial events. John Dee devoted much of his life to attempting to conjure spirits. Most Renaissance thinkers warned against such activity, pointing out that legitimate *scientia* had its limits. Early in the 16th century a cautionary tale began to spread about 'Dr Faustus' (or Faust). Whether it had a factual basis we do not know but it certainly appealed to those who were suspicious of the claims made by magi. This Faustus had made a pact with the devil, handing over his immortal soul in exchange for worldly wealth and power. In 1587 an anonymous book, *Historia von D Johann Fausten*, was published in Frankfurt. On this the English playwright, Christopher Marlowe, based his drama, *The Tragical History Of The Life And Death Of Dr Faustus*. The play opens with the brilliant scholar dismissing the study of philosophy, medicine, law and theology in order to devote himself to necromancy. "O, what a world of profit and delight, of power, of honour, of omnipotence, is promised to the studious artisan," he exclaims, before conjuring up the demon, Mephistopheles, to do his bidding. The price he pays is eternal damnation.

"Everyone who could afford it, including Church leaders, employed astrologers"

space was against common sense: if it were true, violent winds would be constantly ripping across the surface, flinging off all movable objects. Some cited the Bible, which taught a geocentric divine plan. Indeed, the book of Joshua even spoke of the Sun being made to stand still for a whole day. Any kind of proof rested on mathematical calculation and not observation. That is why final resolution of the problem had to wait until the invention of the telescope in the 17th century.

Getting the movements of heavenly bodies 'right' mattered, not only for such activities as maritime navigation but also for the daily life of all people. There was no distinction between astronomy and astrology. The spiritual, intellectual and physical aspects of human experience were bound up together. The ultimate sphere of Ptolemy's system was heaven, from where God's influence permeated down through all the other levels. One of the more controversial Renaissance thinkers, Henry Cornelius Agrippa (1486-1535) expressed it thus in his *De Occulta Philosophia* in 1533:

"The very original and chief worker of all doth by Angels, the Heavens, Stars, Elements, Animals, Plants, Metals and Stones convey from himself the virtues of his Omnipotency upon us, for whose service he made and created all these things."

No-one doubted that the movements of the heavenly bodies of the solar system (within the sphere known as the zodiac) influenced human destiny. Therefore, the casting of horoscopes was important. It formed a vital part of medical practice and everyone who could afford it, including rulers and Church leaders, employed astrologers, so that all of their decisions and activities could be timed to coincide with the most 'auspicious' conjunctions of heavenly bodies.

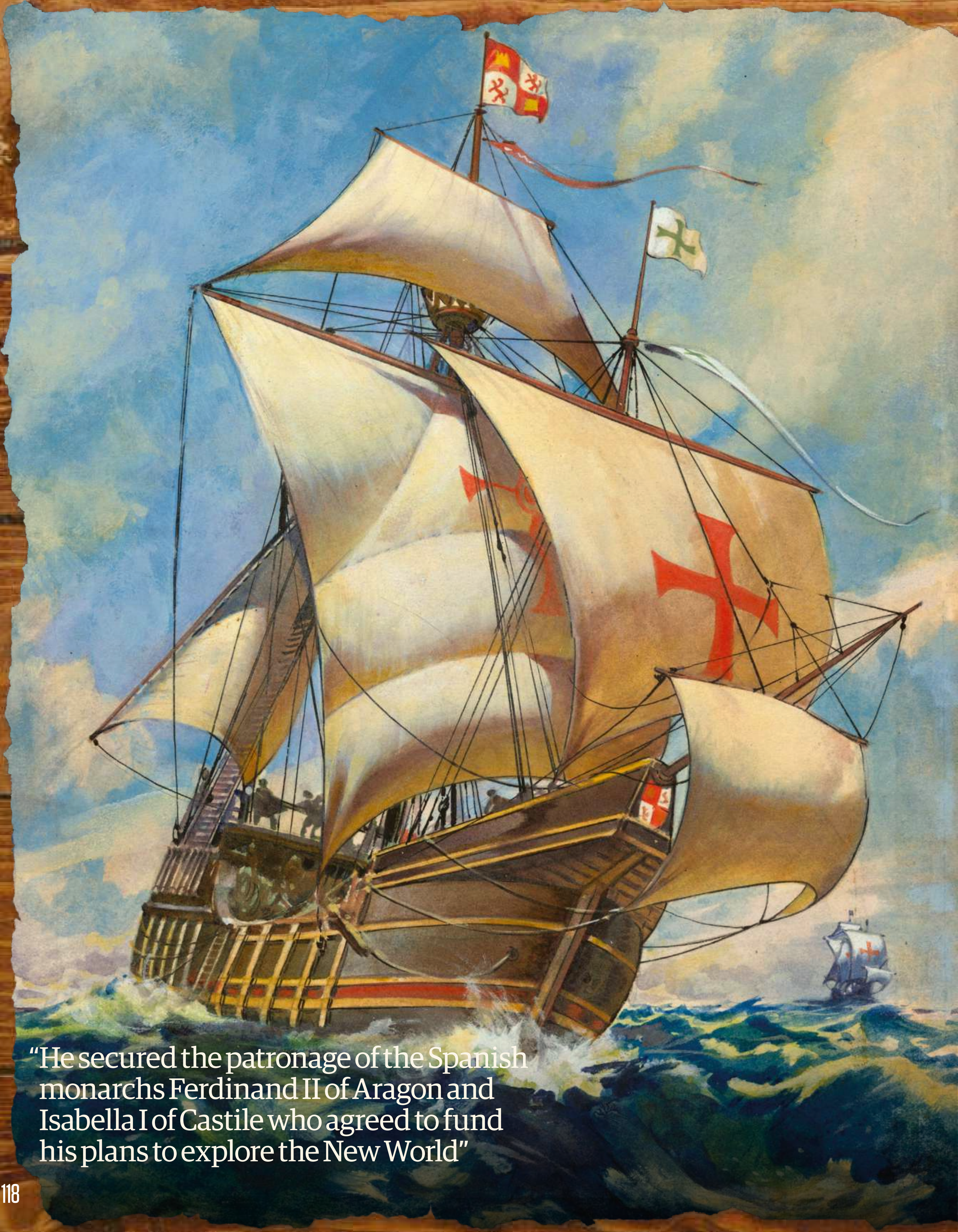
The Danish scholar, Tycho Brahe (1546-1601), was still grappling with the same problem 50 years later. This wealthy aristocrat and amateur astronomer was an extrovert showman. He threw lavish parties, kept a beer-swilling elk indoors and wore a metal sheath over his nose to cover a fencing scar. But he had a serious side, studied at various universities and devoted years of exhaustive labour to probing the heavens and measuring the movements of the major heavenly bodies.

He decided the only way to reach conclusions was by plotting the orbits of planets and their relations to one another. Thanks to the support of Frederick II of Denmark, Tycho had the resources for this laborious work. He was given the island of Hven, between Denmark and Sweden, and generous funds to set up a complex called Uraniborg, consisting of a library, laboratory, workshops and a printworks to enable him to published his findings. Here he employed an army of virtually slave workers who created, to his specifications, a large number of quadrants, sextants and other instruments. Tycho was a firm believer in astrology and his principle motive was to plot planetary movements as precisely as possible so that horoscopes could be drawn with maximum accuracy. But for all his efforts he could not explain the inaccuracies which beset both the Ptolemaic and Copernican theories. Eventually, he produced his own compromise solution – a geo-heliocentric theory. He suggested that, while Sun, Moon and farther stars circled the Earth, the five planets of the solar system revolved around the Sun. Unfortunately for Tycho, in 1597 his patron died and the new king did not like him. The master of Uraniborg was forced to leave. As soon as he did so, the buildings of the hated task-master were destroyed by his resentful employees. And still the world was waiting for the telescope.

Another branch of ancient wisdom given a new twist by men of the Renaissance was alchemy. The basic belief of alchemists was that everything in the universe was made up of four elements – earth, air, fire and water. This theory had implications for human wellbeing as well as for physics. In medical practice the four elements were linked to four bodily 'humours' governed by phlegm, blood, yellow bile and black bile. Good health consisted in keeping the humours in balance. The application of alchemy to physics followed much the same way of thinking. As all substances were made from the same four ingredients, just in different proportions, it was possible to change their make up (by heating, distilling, mixing, etc). Thus, for example, base metals could be changed (transmuted) into gold. Unfortunately these basic theories did little for the progress of medical science and lent themselves to abuse by fraudsters.

One Renaissance thinker who challenged the use (though not the importance) of alchemy was Philippus Aureolus Bombastus von Hohenheim (1493-1541), who adopted the name of Paracelsus. This aggressively controversial German lived the life of a wandering scholar and writer and was a formative figure in the transition from alchemy to chemistry. He asserted that the human body is a bundle of chemicals. Since it is also bound up with the rest of creation, it was clearly logical to seek remedies for ailments in the animal, vegetable and mineral kingdoms.

It was also Paracelsus's belief that nature abounded in 'similars'. For example, afflictions of the ear could be treated with distillations of cyclamen, whose leaves are similar to the ear. His wide-ranging experiments and observations led him along several false trails but he did make some useful discoveries. He insisted that mind and body were both essential in treating ailments, thus linking the ancient conviction that man is an immortal soul in a mortal body with the later concept of holistic medicine.



“He secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile who agreed to fund his plans to explore the New World”

The Voyages of Columbus

Renaissance man Christopher Columbus was integral to defining the New World, but did he rule with a brutal and bloody iron fist?

The son of middle-class Genoan wool weavers, Christopher Columbus is not your usual child. Driven and incessantly inquisitive, the young boy is fascinated with the maps and charts the traders and seafarers bring to his coastal home in Italy. Something about those empty spaces on the intricately marked canvas calls to him, a fantastical need to fill those gaps and claim the glory such discoveries would surely bring. The unknown doesn't unsettle him, like it does many people of the time – in fact, it does the opposite: it captivates him. Seeing a rare tenacity in his eldest son, his father spends what money a wool weaver can spare and secures a place for Columbus at the University of Pavia. There he studies grammar, geography, geometry, astronomy, navigation and Latin – but for all his studies, the young Genoan finds his mind drifting to those blank voids on the map. This hunger would define his life forever.

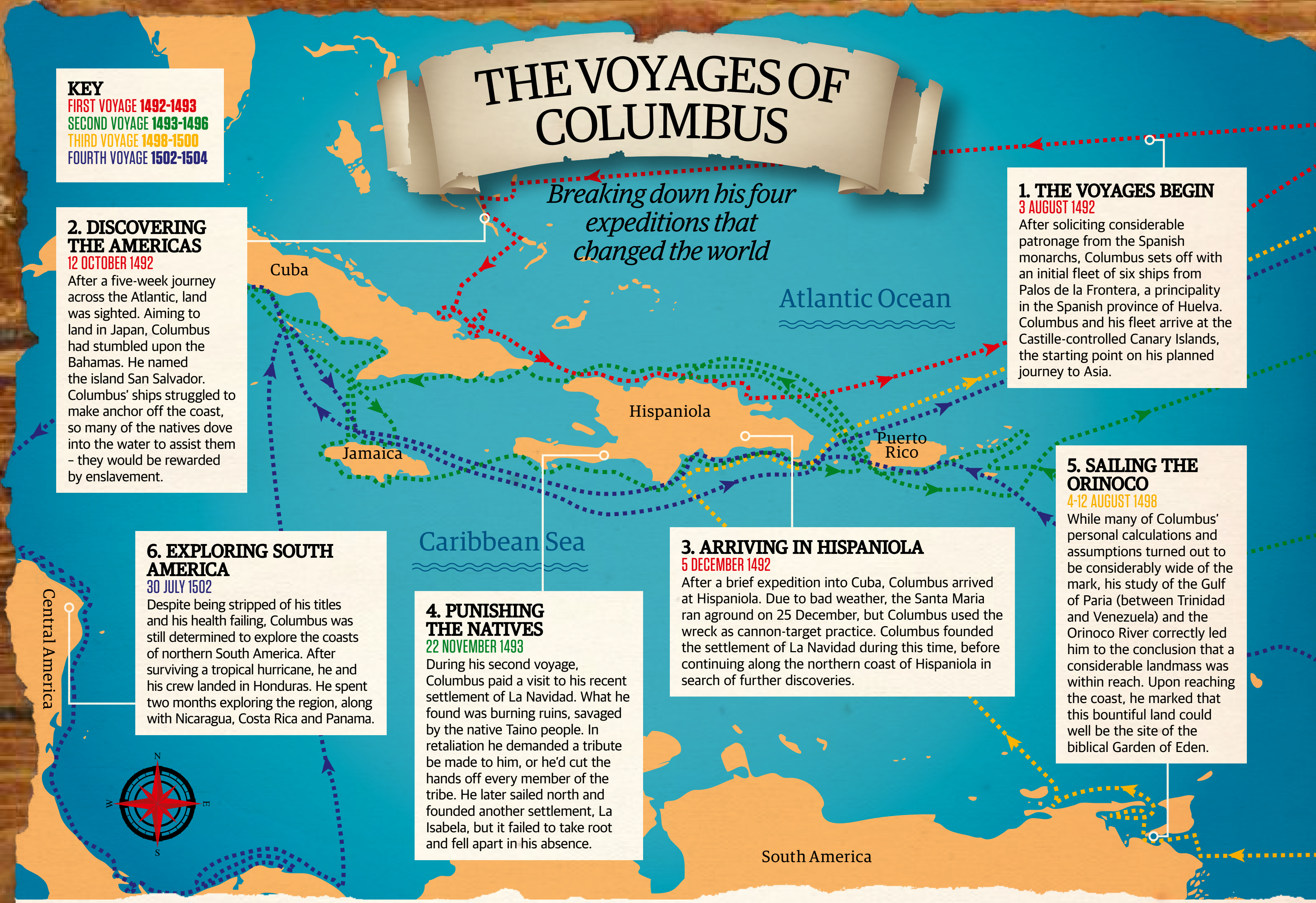
In 1470, Columbus gains an apprenticeship working as a business agent for three influential Genoan families. His learned background and tenacity in the face of adversity makes him a ferocious businessman and he's soon captaining ships that carve the ocean like blades. His work takes him far and wide across the civilised world: Lisbon, Bristol, Galway, West Africa and even settlements in Iceland become common ports of call. While deeply pious, Columbus steadily builds a reputation for ruthless determination. But for all his years of trade and commerce in these establishment lands, Columbus would always find his mind drifting to those incomplete maps he pored over as a child. The only thing standing between him and those fabled lands of untold riches was money. It was time to find a patron – an incredibly wealthy patron.

For many years, Europe held a distant yet lucrative trade relationship with the East. While under the rule of the once-rampant Mongol Empire, European traders travelled a relatively safe route of passage to China known as the Silk Road, but now that Constantinople had fallen to the Turks, the route was rife with piracy. The East was now too dangerous a path to take, even for the most hardened of captains. Columbus was searching for a new route to India and the riches of Asia and to achieve this his plan was simple: sail west across the Ocean Sea (the 15th and 16th-century name for the Atlantic Ocean).

Sailing west wasn't just a case of turning your ships away from the Orient, though. Since a portion of the map remained undefined on Western charts, the view of scholars, geographers and seafarers was a skewed one. Theories that the Earth was flat persisted among some, but it was more the misinterpretations and speculation involving the distances between Europe and Asia, as well as the actual size of the mysterious continents and islands that were rumoured to lie beyond the storm-ridden oceans. Even Columbus' own theories were wildly inaccurate, but his sheer persistence made him stand out from his peers. He eventually secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile, who agreed to fund his plans to explore the New World and claim it in the name of a unified, Catholic Spain.

THE VOYAGES OF COLUMBUS

Breaking down his four expeditions that changed the world



KEY
FIRST VOYAGE **1492-1493**
SECOND VOYAGE **1493-1496**
THIRD VOYAGE **1498-1500**
FOURTH VOYAGE **1502-1504**

1. THE VOYAGES BEGIN

3 AUGUST 1492

After soliciting considerable patronage from the Spanish monarchs, Columbus sets off with an initial fleet of six ships from Palos de la Frontera, a principality in the Spanish province of Huelva. Columbus and his fleet arrive at the Castille-controlled Canary Islands, the starting point on his planned journey to Asia.

2. DISCOVERING THE AMERICAS

12 OCTOBER 1492

After a five-week journey across the Atlantic, land was sighted. Aiming to land in Japan, Columbus had stumbled upon the Bahamas. He named the island San Salvador. Columbus' ships struggled to make anchor off the coast, so many of the natives dove into the water to assist them – they would be rewarded by enslavement.

3. ARRIVING IN HISPANIOLA

5 DECEMBER 1492

After a brief expedition into Cuba, Columbus arrived at Hispaniola. Due to bad weather, the Santa Maria ran aground on 25 December, but Columbus used the wreck as cannon-target practice. Columbus founded the settlement of La Navidad during this time, before continuing along the northern coast of Hispaniola in search of further discoveries.

4. PUNISHING THE NATIVES

22 NOVEMBER 1493

During his second voyage, Columbus paid a visit to his recent settlement of La Navidad. What he found was burning ruins, savaged by the native Taino people. In retaliation he demanded a tribute be made to him, or he'd cut the hands off every member of the tribe. He later sailed north and founded another settlement, La Isabela, but it failed to take root and fell apart in his absence.

5. SAILING THE ORINOCO

4-12 AUGUST 1498

While many of Columbus' personal calculations and assumptions turned out to be considerably wide of the mark, his study of the Gulf of Paria (between Trinidad and Venezuela) and the Orinoco River correctly led him to the conclusion that a considerable landmass was within reach. Upon reaching the coast, he marked that this bountiful land could well be the site of the biblical Garden of Eden.

6. EXPLORING SOUTH AMERICA

30 JULY 1502

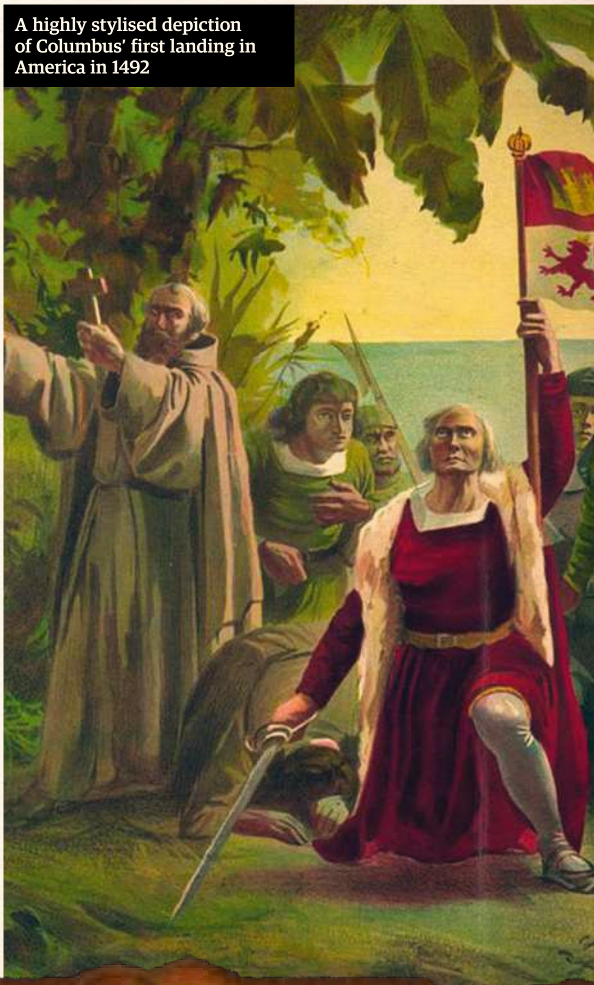
Despite being stripped of his titles and his health failing, Columbus was still determined to explore the coasts of South America. After surviving a tropical hurricane, he and his crew landed in Honduras. He spent two months exploring the region, along with Nicaragua, Costa Rica and Panama.

On the morning of 3 August 1492, with a contingent of three ships and two smaller caravels, Columbus sets sail from Palos de la Frontera. The swells are relatively calm and the ships carve a path toward the Canary Islands in a few days, before restocking supplies and setting sail for Japan. The three ships sail deeper into the unknown. Violent winds and angry swells buffet them across the waves, their intended course ripped apart by tropical storms these westbound seafarers have little experience with. By 12 October, morale on the ships is dangerously low - men have drowned in storms, masts have been broken by vicious gales and even a small mutiny breaks out. Columbus, sat within the confines of his cabin, stares at the maps before him. He knows their course has been broken, but it's the time at sea that troubles him the most. They should have set foot on new lands long before now. Time is running out.

Suddenly, out of nowhere, one of the sailors above screams at the top of his voice: "Land! Land ahoy!" Columbus rushes from his desk, candles, papers and wine flying in his wake. The spray of the swaying oceans stings him in the face after so many hours in a stuffy cabin, but he's soon scrambling onto the poop deck, the prospect of land driving him forward. He squints and takes his first glimpse of a brand new world. Lush greenery and a pale-coloured beach can be seen in the distance, while birds of a peculiar colour circle above the canopy. It's then that he sees them: dark-skinned men and women, most of them barely dressed at all, spears and bows clutched in their hands.

A few hours later, all three ships are anchored at a safe distance and the three crews are now safely on land. Columbus is standing upon Watling Island (which would later form part of the Bahamas). He names it San Salvador and claims it for the glory of Spain. Over the next few days, Columbus meets with the three main tribes of the island - the Taino, the Arawak and the Lucayan - and begins building a relationship that tells him a great deal about this new Eden. Only one other tribe, based on a distant island, is aggressive toward them, occasionally landing raiding parties to take slaves. In one of his journal entries, Columbus remarks: "I could conquer the whole of them with 50 men, and govern them as I please." Columbus views them less as people and more as another acquisition with which he can return to Spain. While this attitude may seem callous, it is a common one that will eventually drive and maintain the slave trade for hundreds of years to come. After a week or more on San Salvador, he begins searching the surrounding waters, eventually arriving on the northern coast of Cuba, before landing on the coast of Hispaniola on 5 December 1492.

Hispaniola is a much larger land mass than the first island he embarked on, and with a calm


A highly stylised depiction of Columbus' first landing in America in 1492

sea behind him and stories of a realm rich with gold and other treasures, Columbus is confident he's found the beginning of his own legacy. In a matter of weeks he establishes a settlement on the island, La Navidad, and on 25 December orders a specially chosen crew of his most trusted seafarers to take the Santa Maria and sail north and conduct more reconnaissance.

Unfortunately, Columbus is drunk at the time he gives the orders, as is the crew he appoints. In a matter of a few hours, half the crew fall asleep and the boat crashes into the rocks.

On 13 January 1493, Columbus meets with the carique (the head chieftain of the Taino peoples) of Hispaniola, Guacanagari, who agrees to the explorer's request to leave 39 of his crew behind to populate the settlement. He leaves on the last exploratory part of his first voyage and arrives some days later on the Samana Peninsula, where he encounters the far less friendly Ciguayos tribe. The carique on the island refuses to grant Columbus leave to establish a settlement; battle soon ensues and two of the tribe's people are killed. As punishment, Columbus captures 30 of their people and sets sail for Spain - only seven of the captives survive the long trip back to Europe.

> "La Navidad has been razed to the ground, burned to a cinder by the Taino people that had been so accommodating the year before"

Upon returning to the court of the Spanish monarchs, Columbus becomes the talk of Europe with his journals, maps, fruits, spices, gold and native captives. His irrefutable proof of a new land between Europe and Asia now laid before them, Isabella and Ferdinand happily award Columbus the titles previously agreed, and he becomes the Admiral of the Ocean Sea and viceroy and governor of all the lands he discovers. In order to ensure the expansion of Hispaniola, Columbus sends his brother Bartolomeo along with a consignment of sailors, soldiers and tradesmen soon after.

On 24 September, Columbus sets out on his second major voyage. It's an expedition that takes a far more southerly route, taking in the other islands in the Bahamas, as well as a stopover in Jamaica. On 22 November, Columbus and his fleet of 17 ships turn their bows toward Hispaniola, the Genoan governor ready to see the plans he gave his brother back in Cadiz come to life. What he finds is a burning ruin. La Navidad has been razed, burned to a cinder by the Taino people that had been so accommodating the year before. He had brought civility to their darkened corner of the Earth. He had given them stability. He had given them the power of Christ.

LIFE ON THE WAVES

What was the reality of sailing the oceans in the 15th century?

Ship's surgeon

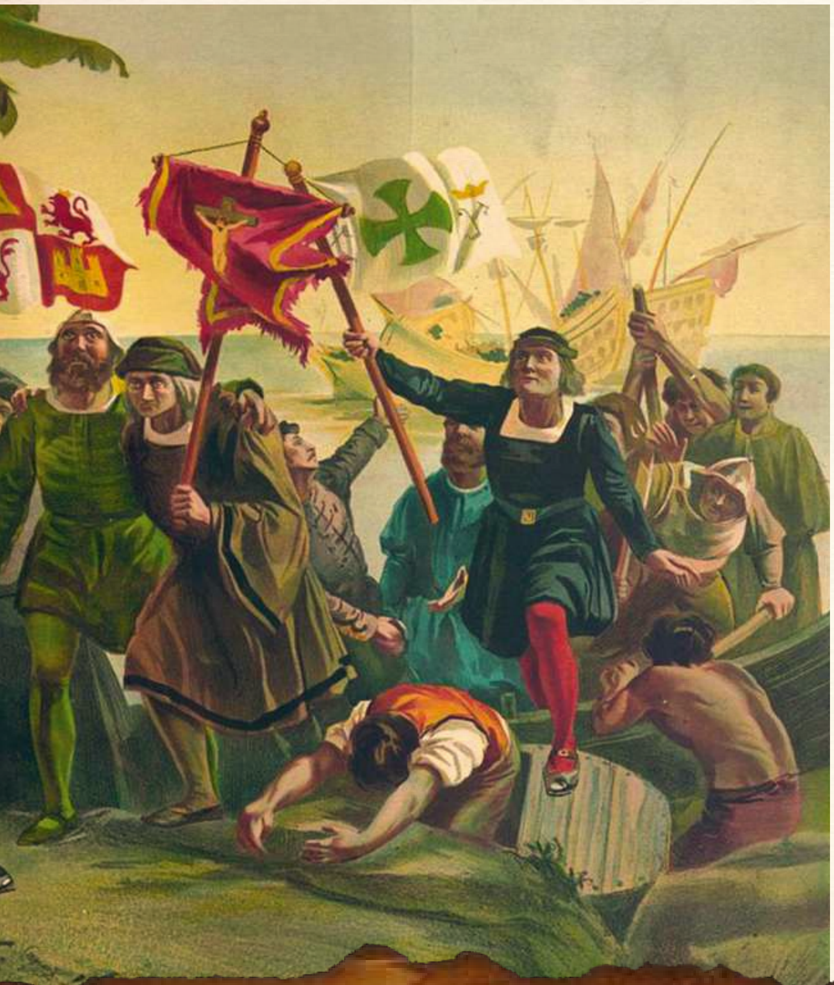
Life aboard a 150-tonne ship was fraught with dangers. Cannons could misfire, limbs could be broken by broken masts and flailing rigging, as well as the various diseases and ailments that could affect the crew. At the heart of all this was the ship's surgeon, whose role was to ensure a crew remained fit enough to fulfil their duties, however gruesome the treatment.

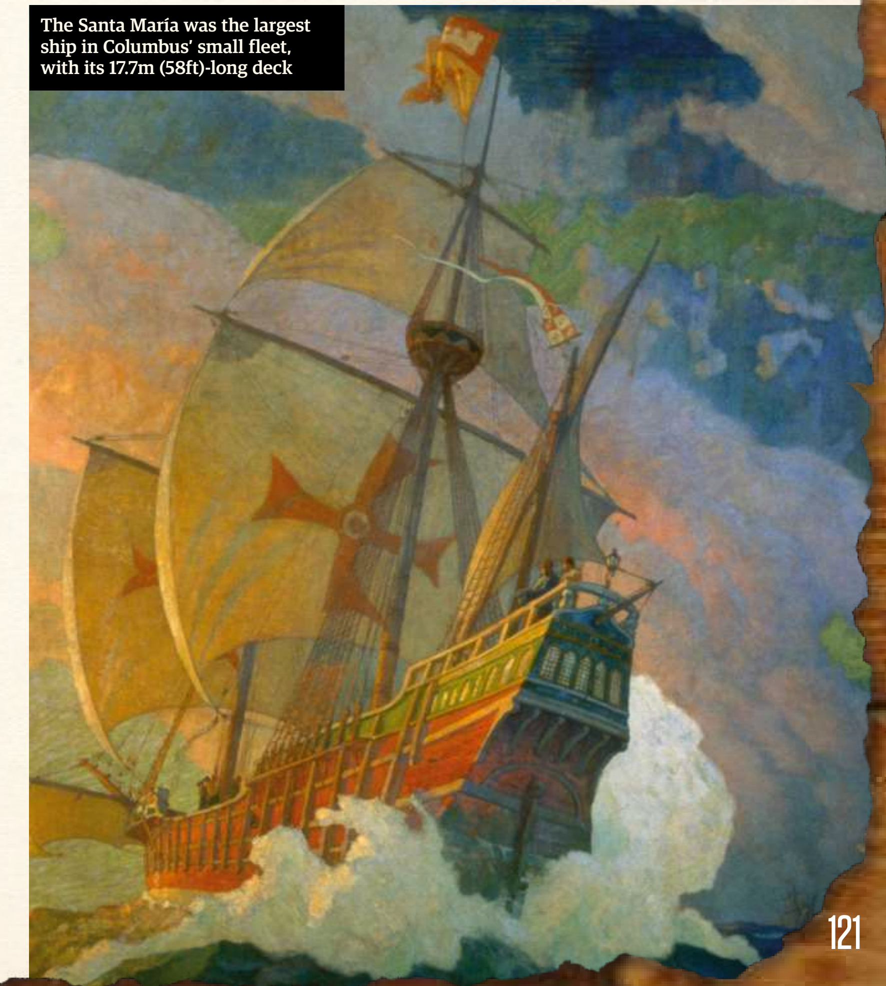
Boatswain

The boatswain was one of the most important members of a ship, and with that responsibility came its fair share of danger. A boatswain was in charge of maintaining the ship's deck and ensuring the sails and rigging remained in the best condition. In moments of emergency, such as a raging fire (a common occurrence due to powder kegs overheating in hot, dry temperatures) and storms, a boatswain would be first on the scene.

Ordinary seaman

For all the master gunners and quartermasters, there was always need for seamen willing to do the hard graft that life at sea demanded. Known rather less affectionately to their fellow crew as 'swabbers', ordinary seamen found themselves doing the Santa Maria's worst jobs. Pumping and removing bilge (the stagnant water that collects in the lowest compartment of a ship), untangling knotted rigging and swabbing the decks clean were just some of their chores.





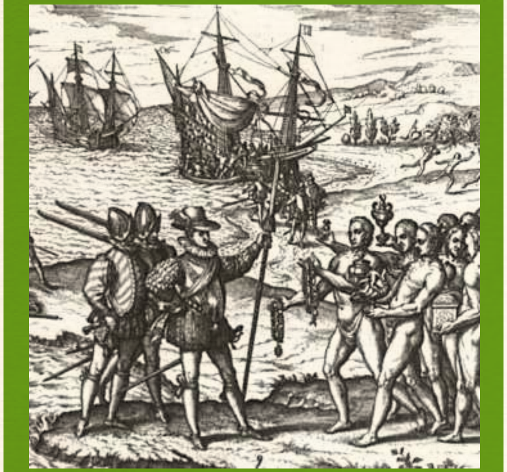
The Santa María was the largest ship in Columbus' small fleet, with its 17.7m (58ft)-long deck

CUTTHROAT COLUMBUS

Three of the legendary explorer's most brutal actions

Public humiliation

Columbus and his like-minded brothers, Bartolomeo and Diego, were known for their psychological as well as physical torture. "Columbus' government was characterised by a form of tyranny", says Spanish historian Consuelo Varela. One such case involved a woman who dared to suggest Columbus was of lowly birth. Columbus' brother Bartolomeo had her stripped naked and paraded through the colony on the back of a mule. "Bartolomeo ordered that her tongue be cut out", adds Ms Varela. "Christopher congratulated him for defending the family."

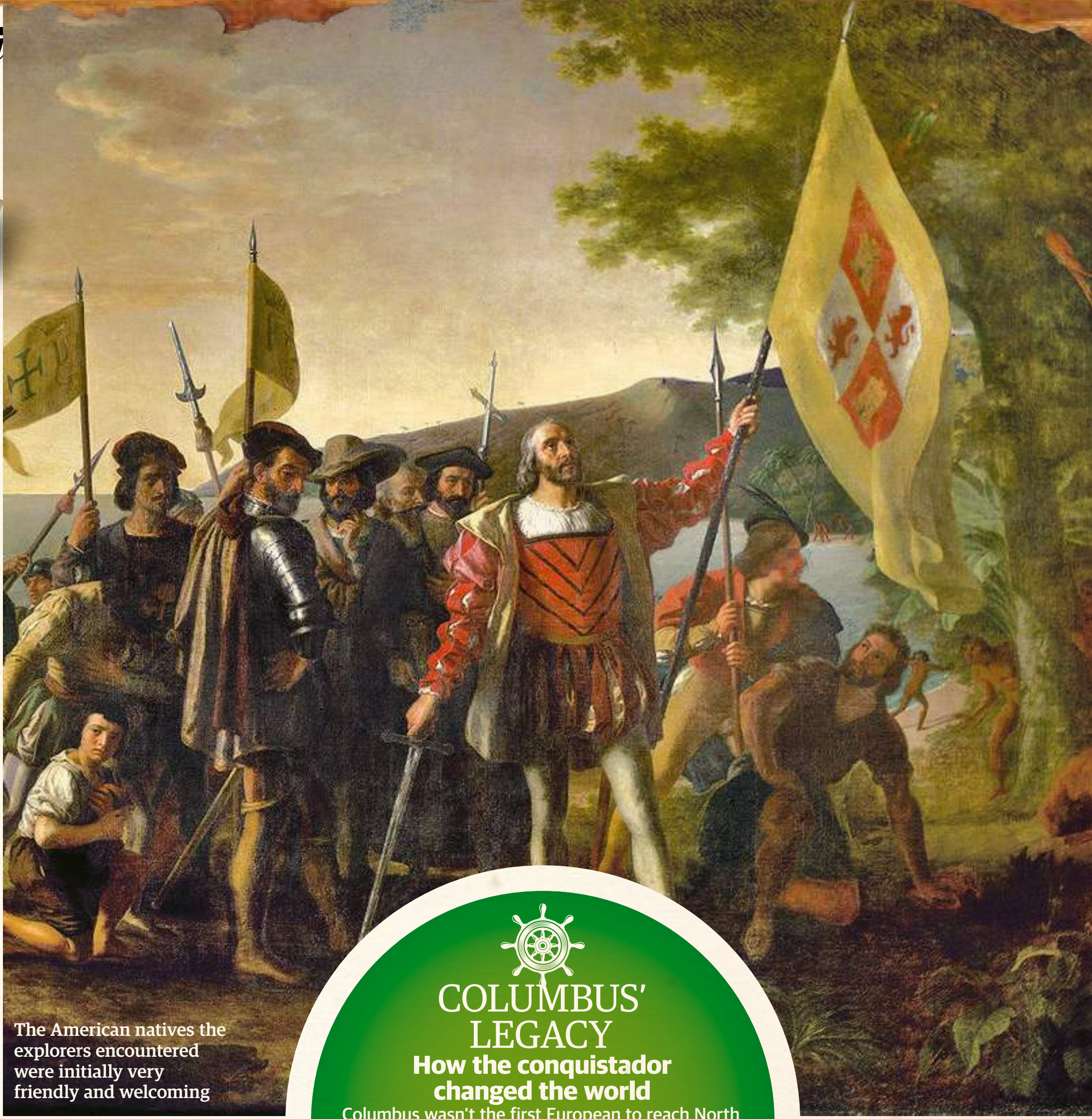


Worked into the ground

When Columbus arrived in the Bahamas in 1492, he discovered a number of peaceful native peoples, most notably the Taino tribe. Columbus himself remarked on how friendly these dark-skinned natives were – they carried few weapons either, since their society bred few if any criminals. He also discovered rich deposits of gold, so he claimed the land in the name of the Spanish Crown and enslaved that very tribe. Within two years, 125,000 – half the population – had died from working in Columbus' mines.

Slavery and mutilation

Columbus was a troubled man, paranoid and deeply suspicious, especially in his later years. According to one report, a man caught stealing corn had his ears and nose cut off at Columbus' request, before being sold into slavery. Enforced servitude became a common course of action for Columbus and his law-enforcing brothers. Columbus himself personally oversaw a sickening trade in sexual slavery, selling young Indian girls and women into a life of brutal prostitution.

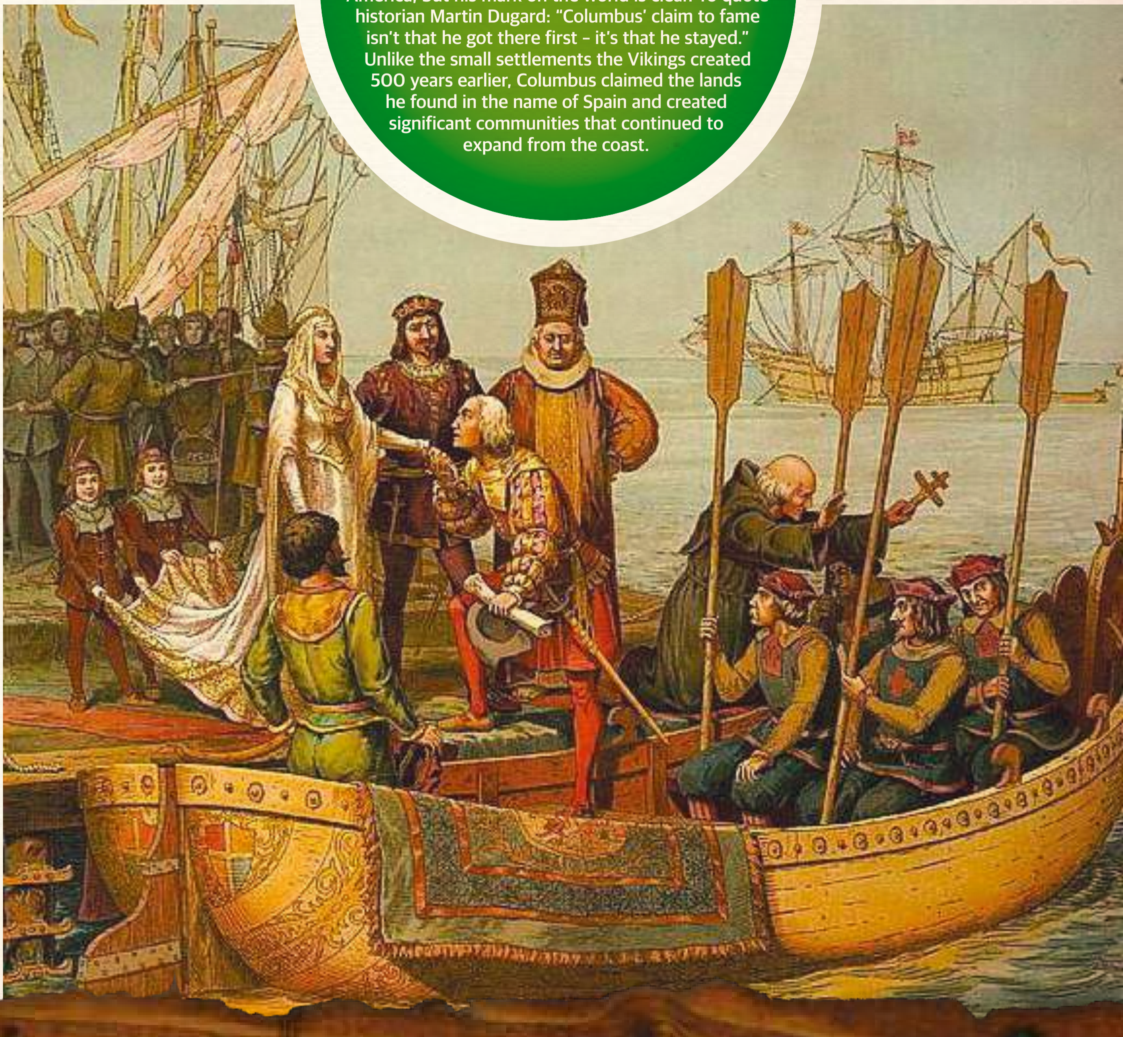


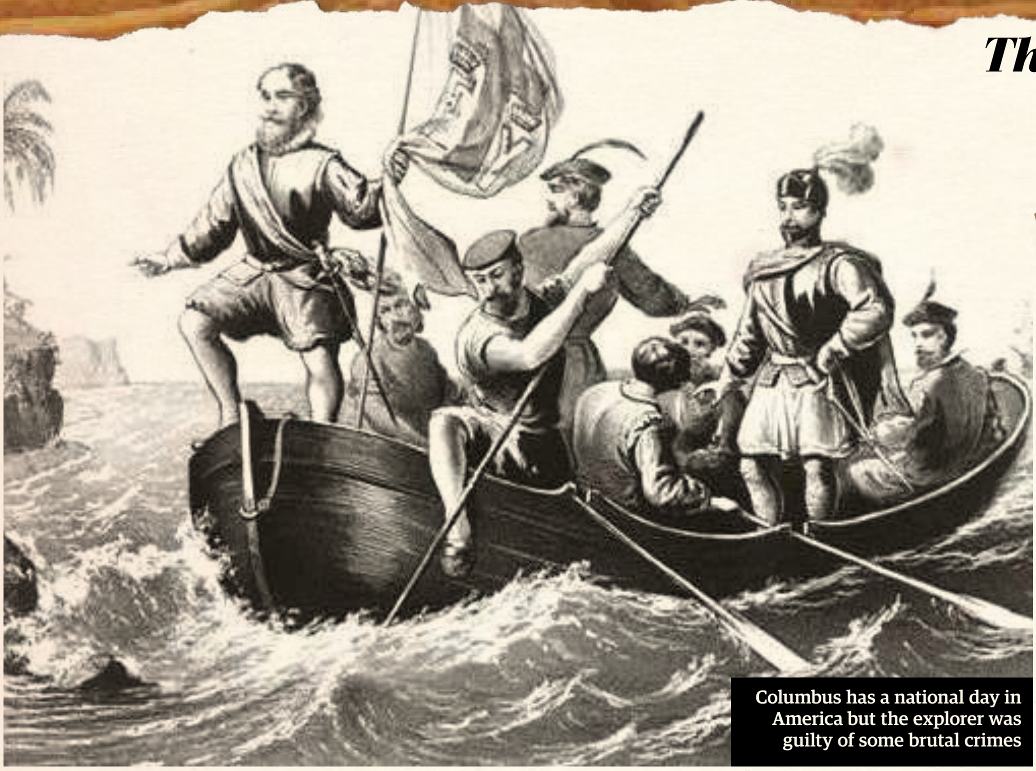
The American natives the explorers encountered were initially very friendly and welcoming

COLUMBUS' LEGACY

How the conquistador changed the world

Columbus wasn't the first European to reach North America, but his mark on the world is clear. To quote historian Martin Dugard: "Columbus' claim to fame isn't that he got there first – it's that he stayed." Unlike the small settlements the Vikings created 500 years earlier, Columbus claimed the lands he found in the name of Spain and created significant communities that continued to expand from the coast.





Columbus has a national day in America but the explorer was guilty of some brutal crimes

They had repaid him with a ruined settlement and countless butchered Spaniards.

In Columbus' absence, but very much following his direct orders, Hispaniola had quickly become a far-different place than the one they arrived at. The abundant and peaceful tribes of the island were happy to share the locations of the gold-rich valleys with their foreign guests, but they were less prepared for what came next. Bartolomeo Columbus forced thousands of the natives into slavery, making them dig mines into the mountains, scouring it for precious metals. Hundreds of Europeans brought with them a great number of Western diseases, and such viruses spread through the unprepared natives like wildfire. Such conditions had led the Taino people to lead a rebellion against the foreign invaders, but their actions only galvanised Columbus' own desire for order and retribution.

With his brothers at his side and his Spanish patrons none the wiser, Columbus carved untold riches from the heart of the land. Such riches kept the Spanish monarchs happy, but rumours of brutality would soon spill out across the waves, with reports that Columbus' governorship had sent him mad with power. While reports of his brutality were true, they were seized upon with gusto by the many enemies he had made at the Spanish court, who were jealous of the riches he was making. It is likely his Spanish patrons did indeed have some idea to the lengths Columbus was willing to go to seek his fortune in the New World. However brutal he might have been, his efforts were still filling the coffers of the Spanish crown at a time where war had drunk them dry.

> "Columbus' seven-year rule had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million to around 60,000 by 1500"

Columbus would conduct a third voyage before Ferdinand and Isabella were forced to send an emissary to investigate the claims that hung thickly over the Spanish court. After receiving the report, they stripped Columbus of his titles and sent the administrator Francisco de Bobadilla to further investigate and govern in his stead. When Bobadilla arrived in August 1500, the land he found was certainly a startling one. Columbus' seven-year rule of the island had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million free people to around 60,000 by 1500. He hears reports of Columbus selling young girls into sexual slavery and complaints that Columbus and his brothers would mutilate and humiliate anyone who stood in their way. The man who now has his own national holiday in the United States was eventually sent back to Spain in disgrace, but the Spanish monarchs did not imprison or hang him; stripping him of their patronage and his titles had nearly broken an already sick and ailing man.

Columbus' legacy is defined by his passion for discovery, but some modern accounts are perhaps quick to forget he was a conquistador by name and by nature. Driven by a desire to chart and define the New World, Columbus had not only discovered new lands, he had helped establish a Western footing that would continue to expand for hundreds of years. In his later years he wrote: "By prevailing over all obstacles and distractions, one may unfailingly arrive at his chosen goal or destination." While his actions will always have a shadow over them, his life-long desire to banish the unknown will ensure his name lives on forever.

THE VOYAGES IN NUMBERS

The shocking stats behind Columbus' conquistador career

3,700KM

The distance between the Canary Islands and Japan, according to Columbus' calculations

17

The number of ships, made up mostly of durable, long-distance-ready carrack-style vessels, Columbus used in his second voyage in 1493

19,600KM

The actual distance between the Canary Islands and Japan. Despite the advice of cartographers and geographers, Columbus would not be swayed on his own estimates

11

Number of combined years Columbus spent exploring, with his four main voyages for the mighty Spanish Crown

1,500

The total number of colonists (mainly Spanish, Portuguese and Italian) that Columbus drafted for his first-ever voyage across the Atlantic Ocean

29

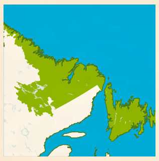
During his third voyage in 1502, Columbus lost 29 of the 30 ships he set sail with, after getting caught in a violent storm off the coast of Santo Domingo

10 EXPLORERS WHO HELPED DISCOVER THE AMERICAS

John Cabot

ITALIAN 1450-1499

Exploring the New World in the name of the Tudors

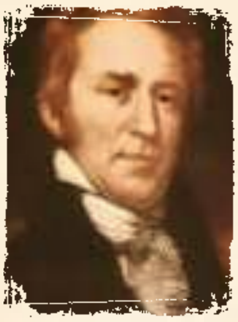


Explored: Newfoundland

Also: Nova Scotia (Canada); Maine (United States)

John Cabot is believed by many historians to be the first European to set foot in North America since the Vikings established Vinland in the 11th century. Under the patronage of King Henry VII of England, Cabot touched down in Newfoundland, Maine and Nova Scotia. Unfortunately, Cabot was neither the sailor nor the captain that Columbus was and his voyages have largely been forgotten.

William Clark



AMERICAN 1770-1838

The man who co-charted and co-claimed the Pacific Northwest

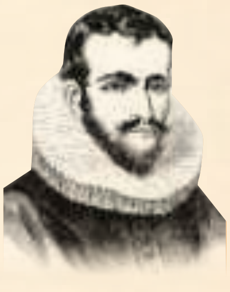
Explored: Oregon

Also: Kansas City, Missouri, Nebraska, North Dakota

Politician. Soldier. Governor. Explorer. William Clark remains one of the most influential men to ever chart his own country. At the beginning of the 19th century, North America was divided between the United States, Spain and France. Following the purchase of Louisiana from the French in 1803, Clark, alongside explorer Merriweather Lewis, led a two-year expedition that mapped a practical route through the wilds of the northern states.

> "Elizabeth granted Raleigh a patent to explore the New World"

Henry Hudson



ENGLISH 1560s-UNKNOWN

A China-bound seafarer who stumbled upon New York

Explored: New York (United States)

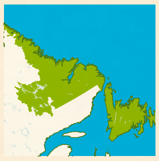
Also: Newfoundland, Nova Scotia (Canada);

While the particulars of Hudson's personal life remain speculative, his actions as an explorer helped change European understanding of the New World's geographical layout. While attempting to create a direct route to Cathay (the medieval name for China), Hudson accidently discovered what would become New York. In fact, Hudson's mapping of the region was so integral that a river was renamed in his honour.

Leifur Eiriksson

ICELANDIC CA 970 - CA 1020

500 years before Columbus, a Viking discovered the New World



Explored: Vinland (modern-day Newfoundland)

Viking explorer Leifur Eiriksson's travels across the oceans from Scandinavia helped establish a stronghold in Vinland (the Old Norse name for North America). While Icelandic records like the *Saga Of The Greenlanders* point out Leifur wasn't the first Norseman to place a leathered sole on American soil, he galvanised Viking activity in Vinland. Although he died almost a thousand years ago, the fabled Norse explorer left a mark on Scandinavia and North America that still remains. Visitors to St Paul, Minnesota, will see a bronze statue of Leifur standing proudly near the Minnesota State Capitol, with his image symbolising the migration of Nordic people to America.

THE *WORST* EXPEDITIONS REVEALED

Voyages into the unknown famous for all the wrong reasons...

600 Spaniards die in the Gulf of Mexico

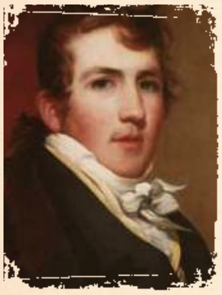
In 1527, the Spanish Crown sent a fleet to conquer and colonise Florida and the Gold Coast. A mutiny reduced the fleet at the Dominican Republic, while a hurricane drowned hundreds of Spanish sailors. The remaining survivors washed up on the coast of Florida, but many died at the hands of native tribesmen. Of the 600-strong crew, only four returned to Spain in 1528.

Magellan falls foul of the elements

Famous for almost circumventing the globe in the 16th century, Portuguese explorer Ferdinand Magellan miscalculated the size of the Pacific Ocean on a voyage to Asia. Most of his 270-strong crew died of thirst and hunger long before they made landfall on Guam. Those who didn't perish died at the hands of Filipino natives, including Magellan himself.

A fatal race to the South Pole

In 1911, a group of explorers led by Captain Robert Scott attempted to be the first people to reach the South Pole, but they were beaten in their quest by a Norwegian team led by Roald Amundsen. These five men – Scott, Wilson, Oates, Bowers and Evans – paid the highest price and died. Scott has since been blamed for poor planning but bad luck also played its part as well.



Robert Gray

AMERICAN 1755-1806

A captain who lost an eye, but gained an extraordinary legacy

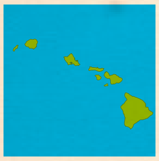
Explored: California (United States)
Also: British Columbia (Canada); Washington, Oregon.

A merchant sea captain, Gray pioneered the maritime fur trade on the Northern Pacific coast of his home nation, discovering more regions as he pushed trade further up and down that side of the country. He's most famously credited with the first American circumnavigation of the globe, as well as the travelling on and naming of the Columbia River in 1792. To this day, many geographic features in Washington and Oregon bear his name to mark his historical legacy.

James Cook

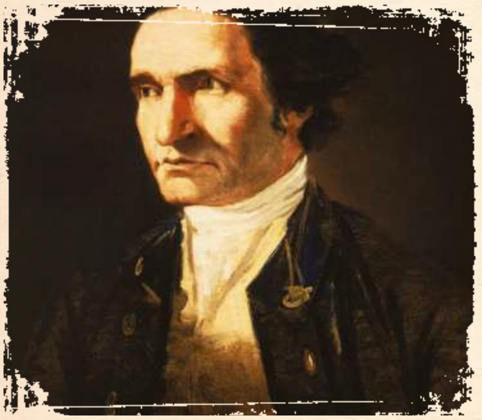
BRITISH 7 NOV 1728 - 14 FEB 1779

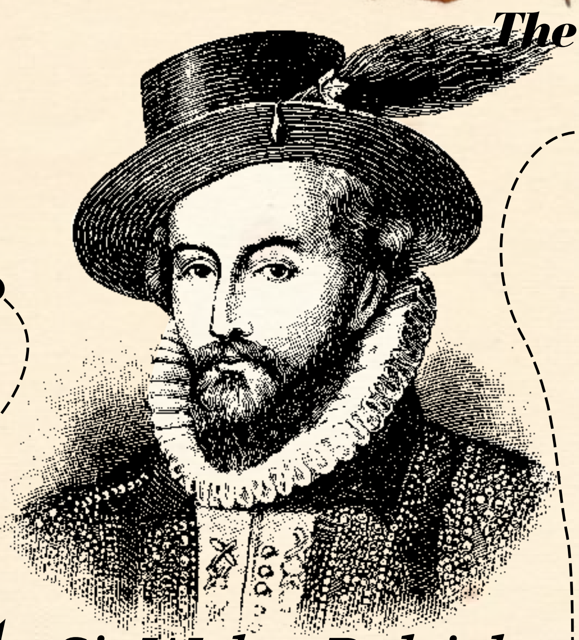
A military man turned explorer who met his end in the new worlds he discovered



Explored: Hawaii
Also: Saint Lawrence River (Canada/United States).

Much like Columbus and Marco Polo, captain James Cook's name is synonymous with early exploration. He began his career as a teenager when he joined the Merchant Navy, seeing action in many naval clashes of the Seven Years War. Cook then used his experiences charting the Saint Lawrence River during the Siege of Quebec to gain the command of three expeditions around the world. Cook's travels also brought him to the island of Hawaii, where his expert cartography skills enabled him to chart the islands with a detail unrivalled by his peers. He died during a clash with native Hawaiians during this third major voyage in 1779.





Sir Walter Raleigh

ENGLISH 1554-1618

Poet, soldier, courtier, spy, explorer

Explored: North Carolina, South Carolina
Also: Georgia, Florida (United States)

Perhaps one of the most famous explorers save Columbus himself, Sir Walter Raleigh gained favour in the court of Elizabeth I, with his many fabled bounties of treasure and exotic items typifying the Golden Age of the monarch's reign. Following years of war with France and Spain, English merchants were now pushing farther afield into Asia, Africa and the New World. As well as being famous for his pursuit of El Dorado (the City of Gold), Raleigh was instrumental in the English colonisation of North America. In the late-1580s, Elizabeth granted Raleigh a royal patent to explore the New World in the name of the English Crown.

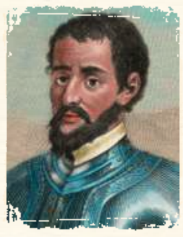
Claude-Jean Allouez

FRENCH 1622-1689

A passionate zealot who explored the New World

Explored: Wisconsin
Also: Michigan, Indiana (United States)

Born in France, Allouez was a Jesuit missionary who travelled to Canada in order to help solidify a series of missions in the region. As part of his religious journey, Allouez regularly came into contact with members of native tribes, which eventually led him south into the future United States. His initial work setting up a number of missions in Wisconsin also coincided with his travels down the Mississippi River. His extensive and detailed notes of the areas he explored helped the French crown to later claim the Great Lakes for themselves.



Hernando de Soto

SPANISH, 1497-1542

This conquistador plundered the South for riches

Explored: Florida
Also: Georgia, North Carolina, South Carolina, Tennessee, Alabama, Mississippi, Arkansas, Oklahoma, Louisiana, Texas (United States)

Much like English seafarer Henry Hudson, the Spanish conquistador Hernando de Soto initially stumbled upon North America while sailing for China. He had set voyage for the East in search of treasure for the financially precarious Spanish Crown, but instead found a land rich with gold and silver deposits, lush and untamed. While he is most famous for having the first documented crossing of the Mississippi River by a foreigner, his expeditions took him to Oklahoma, Georgia, the Carolinas, Tennessee, Texas, Arkansas, Louisiana and Mississippi.

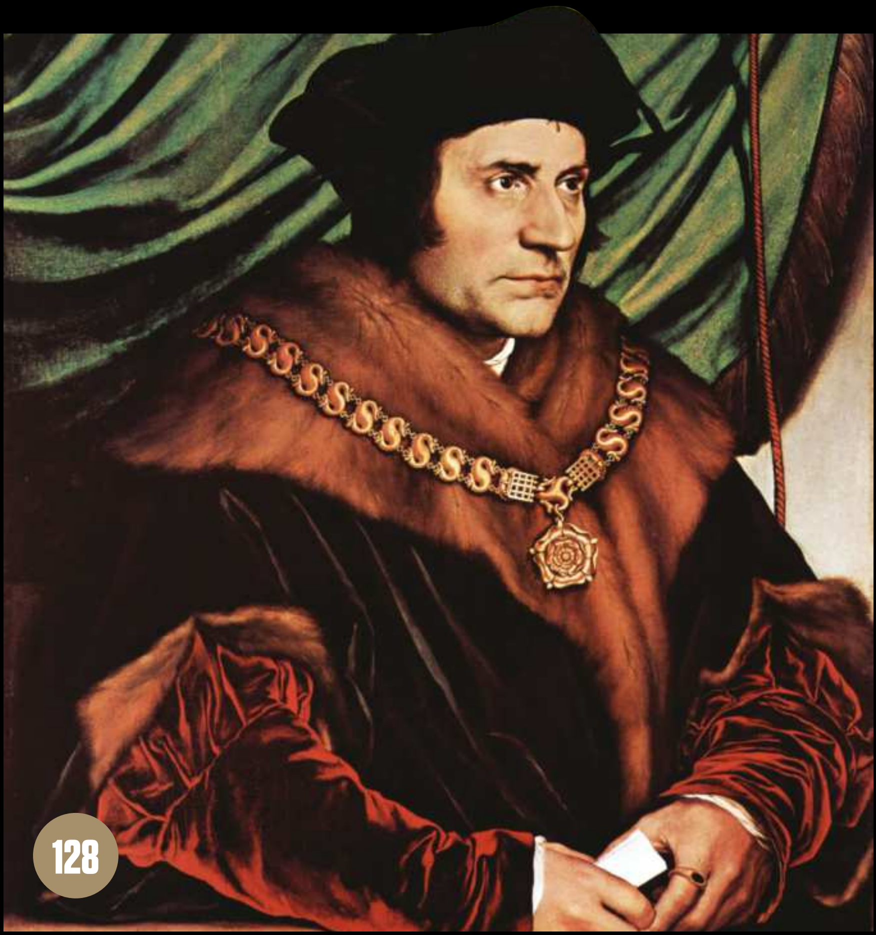
David Thompson

BRITISH-CANADIAN 1770-1857

The "greatest land geographer that ever lived"

Explored: Nevada
Also: British Columbia, Alberta (Canada); Oregon, Montana, Wyoming (United States)

The Westminster-born Thompson headed south from Canada into the wilderness of North America and began uncovering its secrets. Over a career that lasted most of his life, Thompson managed to map a staggering 3.9 million square kilometres (1.5 million square miles) of topography across the Frontier. He started his project around 1793 with his expeditions into the Rocky Mountains, before creating a detailed map of trading posts across the region, including Montana and Idaho. Among other things, the explorer has a highway named after him in Canada.



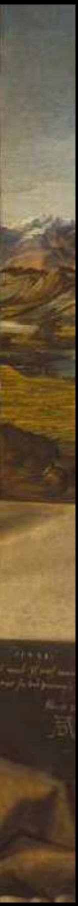
Impact of the Renaissance

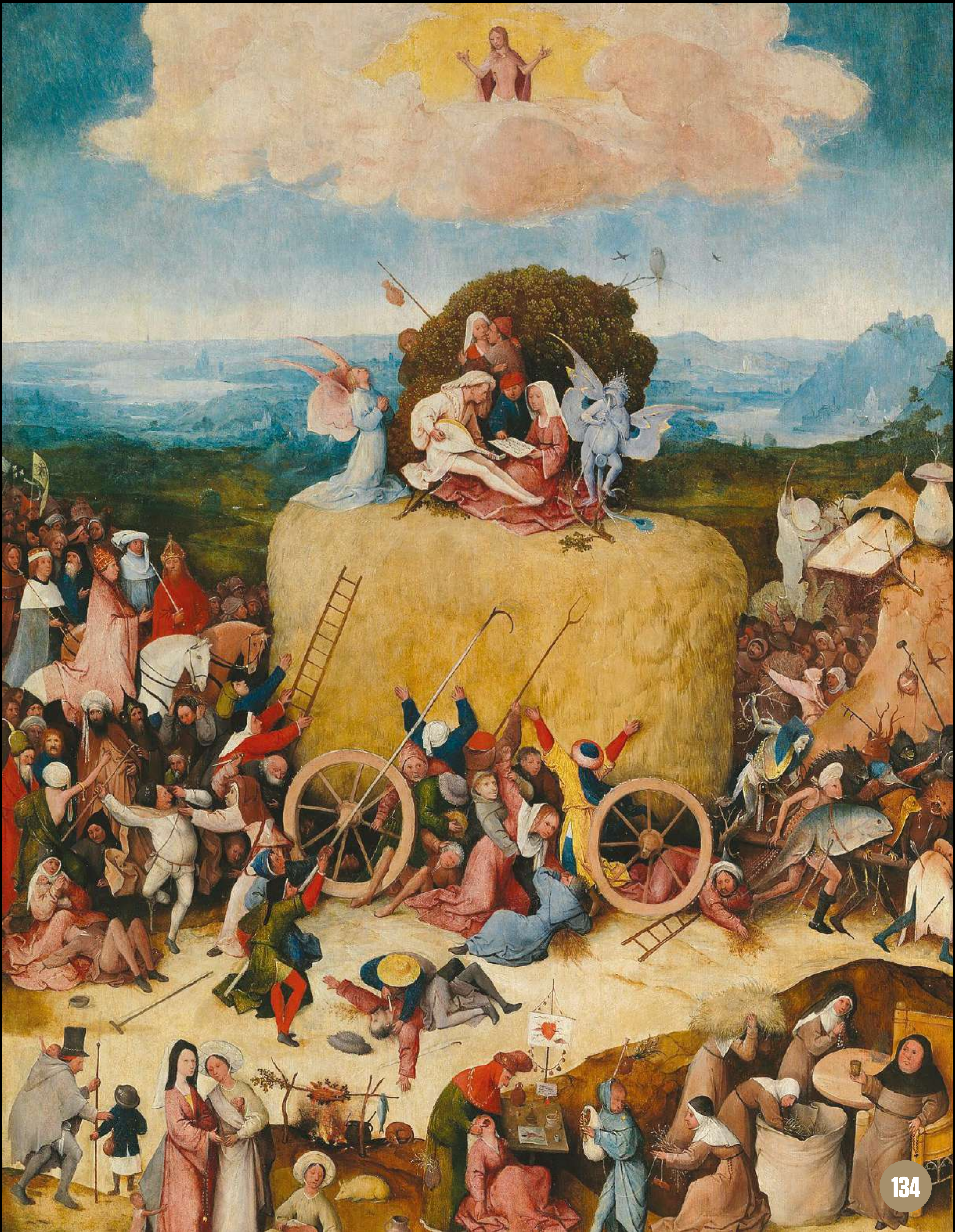
Understand the impact of the Renaissance and the incredible masterpieces left behind for us to study

128 The Renaissance in England
How was England shaped by the discoveries of the Renaissance?

134 The Renaissance in the rest of Europe
Knowledge spread like wildfire across the European continent

138 10 ways the Renaissance changed the world
The effects are still felt today





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The Renaissance in England

Sparking in the workshops of Florence, Europe's cultural rebirth spread throughout the continent and found its own unique flare in England

In January, 1504, perhaps the greatest work of art mankind had yet produced was about to be unveiled for the first time. The Vestry Board of Florence's Cathedral gathered in eager anticipation to see what the artist Michelangelo Simoni had been working on feverishly and in total secret for over two years. Standing at 4.2 metres (14 feet), carved flawlessly out of pure white marble, 'David' was revealed towering over them - it was unlike anything they or anyone had ever seen before. What they beheld was an anatomically perfect, if giant, reinterpretation of the biblical character, in tense preparation to fight Goliath - a metaphor of Florence's defiance and strength. Today we see one of the many treasures of the Renaissance, Europe's cultural rebirth.

In the 15th and 16th centuries, Florence was the unquestionable heart of the Renaissance. A city constantly steeped in fear, of invasion from foreign powers, as well as disastrous plagues, it was here that some of the foremost thinkers, artists and writers of the era would find patronage and inspiration for their work. Though throughout the Reformation the Italian cities remained deeply Catholic, this fear and constant reminder of life's frailty gave much of the art and literature in this era notable humanist traits.

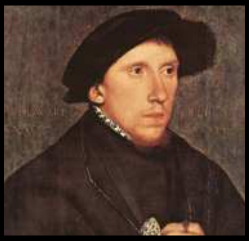
In a break from medieval traditions, artists began to depict scenes with unprecedented realism, utilising light and dark to cast their figures in new and more-dramatic tones. For the first time the Virgin Mary, or the Madonna with child, appeared lifelike, bringing out her humanity. Biblical figures, in addition to characters from antiquity, were brought to life in a way never seen before, in terms of their form as much as the new and more vivid colours artists could bring to their brush.

> "The ideas of the Renaissance were much slower to spread to England"

With a population of around 60,000 at the outset of the 15th century, Florence was a small, but by no means feeble city state. Twelve artist guilds chiefly led the city, monitoring and regulating the flourishing cloth and textile trade that brought in vast amounts of wealth. The city was also sporadically headed by one of several ruling families. The most famous of these was Lorenzo de' Medici, who became the patron of some of Florence's most brilliant minds, including Sandro Botticelli, the aforementioned Michelangelo and Leonardo da Vinci. This method of working under patronage would come to typify lives of many Renaissance artisans, who quickly found fame and fortune plying their skills for rich patrons and even royalty all over Europe.

The ideas and ideals of the Renaissance were much slower to spread to England than elsewhere. While Botticelli was completing one

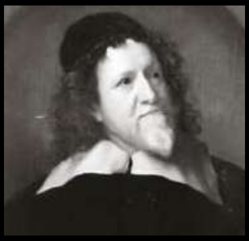
Key figures



HENRY HOWARD, EARL OF SURREY

A friend of King Henry VIII, Howard is considered to be among the foremost instigators of English Renaissance court poetry and the English sonnet form. Sharing his verse among a select coterie of friends at court, his work reflects on life, death and the ideals of living 'the happy life'. Howard rose in the royal graces after his first cousin, Anne Boleyn, married the king in 1533. Though he eventually fell from the king's favour and was executed in 1547 just days before the king's own death, for many Howard embodies the Renaissance spirit of the warrior, the scholar and the poet.

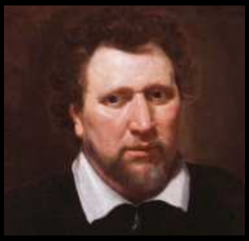
ABOVE: This portrait of Howard was produced by Hans Holbein The Younger, the king's royal painter



INIGO JONES

A highly skilled engineer and artist, Jones spent many of his formative years in Italy, where he absorbed much of the artistic styles brimming in Florence and elsewhere at the end of the 16th century. He gained fame and fortune first as a set and costume designer for King James I, where he worked on the court's extravagant court masques. Soon he was introducing the grandeur of Italian Renaissance architecture to England, working on renovations to St Paul's Cathedral, a new Banqueting House at Whitehall, and even the lavish Covent Garden estate in London, where he designed the capital's first square in the style of Italian piazzas.

ABOVE: Jones was chiefly responsible for bringing Renaissance styles to London into the 17th century



BEN JONSON

Jonson attended a Westminster elementary school at an early age, where he embarked on rhetorical and classical training, as well as lessons in Greek and Latin. A lack of funds forced him to return to his stepfather's trade as a bricklayer, but Jonson was driven to better himself and soon entered the world of the emerging Elizabethan theatres in Bankside. A friend and colleague of Shakespeare, Jonson became among the foremost literary critics and playwrights of his era. After gaining a royal pension shortly after the publication of his first folio he is even considered to be England's first ever poet laureate.

ABOVE: Jonson became not just a great poet and playwright, but also a fiery literary critic

Bertams Castle
Thre Crane
Stiliards
Parys Gardyn
The Bowll baytyng
The Beare baytyng
Wynchester P.
S Mary overyes
South warke

of his most famous masterpieces in 1483 - *Venus and Mars* - England was only just emerging from the latest clash of its bloody civil war. Botticelli's painting depicts a sleeping Mars, the classical god of war, and an alert Venus, the goddess of love. In England, at least, love and peace was restored after the coronation of Henry VII and his marriage to Elizabeth of York, uniting the two warring families and establishing the ruling Tudor dynasty.

In this new peace, patronage of the arts and the emerging mercantile class could thrive, rather than suffer under heavy investment in war. Though a printing press had been brought to England in around 1575, most of the population remained illiterate in the pre-Reformation state. However it would be Henry VIII's reign, beginning in 1509, that would truly see the Renaissance arrive in England. Henry was a huge admirer of art, architecture and a keen musician. Befitting a man of his status, he was well educated and was even an amateur alchemist, with his own personal collection of medicinal ingredients. In particular Henry's love of music, song and poetry spread throughout his court, and it was during his reign that the composer Thomas Tallis made his name.

Leading the Royal Choir, Tallis was a gifted singer and organist, appearing at Sunday Mass

Timeline

1320

The Divine Comedy is completed
Dante Alighieri's epic poem recounts the journey of an unidentified traveller who makes his way through the seven levels of Hell. It is among the earliest examples of written Italian and considered one of the instigators of Renaissance writing.
c.1320

Adoration of the Lamb
Commissioned in the early 15th century, to brothers Hubert and Jan Van Eyck, the Ghent Altarpiece is a 12-panelled oil painting depicting several biblical scenes, as well as the central figures of John the Baptist, Christ and the Virgin Mary.
c.1432

The theory of art explained
Leon Battista Alberti completes his first of three treatises on art, *De Pictura* (*On Painting*), in which he presents new theories of art and its place in the world. His book is read widely in Italy and elsewhere and is considered as being among the first works on art theory.
c.1435

Defining moment

The Gutenberg Bible is printed c.1455

German entrepreneur Johann Gutenberg began experimenting with a prototype printing press in around 1452. Around 1455, he produced the first printed Bible. Though Chinese scholars had been mass-producing text centuries earlier, the Gutenberg Bible marked the birth of the printing press in Europe, enabling the distribution of books and pamphlets all over the continent. This meant ideas on faith, politics and art would spread faster and further than ever before.

The Last Supper
Perhaps Leonardo Da Vinci's most famous work, *The Last Supper* is completed after three years of planning. His depiction of Christ and disciples is painted on the walls of the Convent of Santa Maria delle Grazie near Milan.
1498

St Peter's Basilica is begun
Designed by several of the Old Masters of Italian Architecture, including Michelangelo, Gian Lorenzo Bernini, Raphael and Donato Bramante, the first stones of St Peter's Basilica in Rome are placed.
c.1506

on a rotary basis. Though much of his earlier life is undocumented, he found great success under Henry's patronage and continued to serve in the Chapel Royal into Edward VI's, Mary I's and even Elizabeth I's reigns. During this time he worked within and composed for his choir, appearing at all state occasions such as funerals, weddings and christenings. Among one of his most famous works is *Gaude Gloriosa Dei Mater* (*Rejoice Glorious Mother of God*), composed for a six-part choir and written possibly near the end of Henry VIII's reign, though symbolically it would have been popular during Mary I's reign, given the subject matter of the Virgin Mary.

> "Like any egoist king, Henry was enthusiastic about his own image"

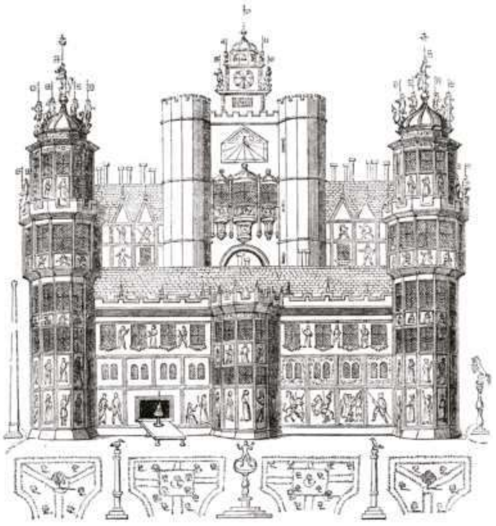
Of course, like any egoist king, Henry was also enthusiastic about his own image and his status of power. He commissioned Nonsuch Palace in 1538 to rival the grand royal buildings seen in France at the time, introducing some of the first Renaissance architecture styles to the country. To design Nonsuch's grand facades, Henry employed Nicholas Bellin of Modena, who had previously been working for the king's great rival, Francis I of France. Bellin was chiefly responsible for the ornate slate carvings covering the building, each depicting classical scenes from antiquity. Henry's other grand building projects included his palaces at Greenwich, Hampton Court and Whitehall, which he spent vast fortunes on renovating and re-shaping to his own taste and to signify his power.

Inevitably all these grand buildings required fine artwork to fill them. Henry's taste in art varied, and he filled his halls with everything from historical battle scenes, to portraits of his ancestors, to iconic biblical imagery. In the 16th century, England had not yet produced a portrait artist of note to rival the brilliance of those emerging from the continent, so royal commissions for new masterpieces had to come from abroad. Antonio Toto and Pietro Torrigiani, both from Florence, each completed sculptures and furniture designs for the king, who was eager to surround himself in the latest splendour seen elsewhere in Europe.

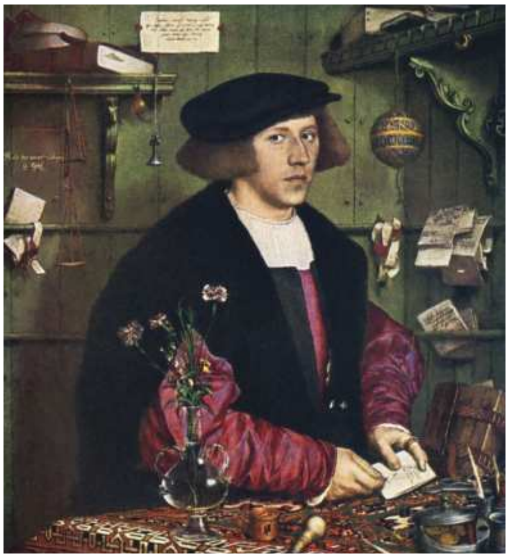
However the most successful artist under the king's patronage was Hans Holbein The Younger, a German student of the humanist and philosopher Erasmus. Introduced to court by Anne Boleyn, Holbein served as the official royal painter from around 1532 until his death in 1543. He produced among the most enduring images of the king, as well as his courtiers, in many ways sparking an increased desire for the nobility to invest in the latest artistic talents from the continent.

Undoubtedly the most celebrated aspects of the English Renaissance are its writers. Thomas More, the king's Lord Chancellor, was among the foremost scholars in England in his time, writing translations of ancient texts, as well as his own poetry and a lengthy work of fiction called *Utopia*. Though he is celebrated as a gifted social philosopher and one of the Renaissance's foremost humanist writers, More was entirely against the Protestant Reformation and Henry's abolition of the monasteries, and it was for this that he was eventually executed in 1535.

Rather than published works, it was within the tradition of court poetry, with manuscript verse being passed between small groups of close friends, that some of the greatest advances in English literature took place. Encouraged by the



Nonsuch Palace was Henry VIII's great architectural project, where he displayed all his wealth and prestige, as well as brought continental styles to England



Among the most celebrated painters of Henry VIII's court, Hans Holbein was responsible for many of the famous portraits of the king and his courtiers

Defining moment

Michelangelo's 'David' is born c.1504

After three-and-a-half years' work, Michelangelo's 'David' is finally unveiled on the Piazza della Signoria, Florence. The completely nude depiction of David was not only intended as homage to classical Greek and Roman sculpture, but also a personification of Florence itself. By the 16th century the fragile republic was on the verge of collapse, and the confident depiction of the youthful, confident David embodied a future renewal of the city itself, as well as its underdog status against the Goliath of foreign powers. On creating 'David', Michelangelo challenged perceived artistic convention by stating that he was 'removing' extraneous matter, until all that was left was David – in a sense uncovering the essence of the art from within the marble itself.

The Prince circulates
Niccolo Machiavelli's most famous work, *The Prince*, is completed. Dedicated to the new ruler of Florence, Lorenzo de Medici, the text is a philosophical analysis of how best to govern and even conquer principalities.
c. 1513

The Reformation begins
In Germany, Martin Luther publishes his translation of the New Testament, making it available to be read outside of the church. This sparks the beginnings of the Reformation in Europe.
c.1522

Human anatomy explained
Belgian physician Andreas Vesalius publishes among the first studies of human anatomy; *De Humani Corporis Fabrica* (*On the Fabric of the Human Body*). His work is the first of its kind as it was based on studying human dissections, and observing the internal functions of the body.
1543

Defining moment

Plutarch's Lives translated 1579

Greek biographer Plutarch chronicled the lives of famous figures from antiquity, such as Caesar, Alexander the Great and Cleopatra. After its French translation was published in 1559, Thomas North translated it into English in around 1579. This made Plutarch's work widely accessible, opening up the interpretation and adaptation of his stories into verse and onto the stage. There is evidence to suggest that North knew Shakespeare, who borrowed from Plutarch when writing some of his most famous plays, including *Antony and Cleopatra*.

1599

The Globe is built
Using the timber from an older theatre in north London, Richard Burbage and his company of actors, with assistance from craftsmen, begin building The Globe Theatre in Southwark, south of the river.
1599

king, Henry's court was brimming with literary talent, such as Thomas Wyatt and Henry Howard. These noblemen are credited with establishing the form of the English sonnet, which would be picked up and adapted by the likes of Shakespeare, John Donne, Ben Jonson and others. The form follows a structure of three quatrains (groups of four lines) and a final rhyming couplet, usually completing a witty conceit or whimsical flourish.

Both men were constantly in and out of the king's favour, each being closely linked with Anne Boleyn; Howard was Boleyn's first cousin, while Wyatt was rumoured to have been her lover. As a result of his often-fluctuating fortunes, Howard's verse in particular reflects on life, death, and man's place in the world. Like much Renaissance literature on the continent, the sonnets of the Tudor court draw heavily from classical references, while including idealistic images of the natural world and man's natural state within it - rooted in the Renaissance humanist tradition. Similar to their counterparts in France and Italy, the poets of the Tudor court were also scholars, engrossed in the writers from antiquity such as Ovid and Homer.

If it can be said that Henry's reign saw the importing of the continent's Renaissance in art and architecture, then the Elizabethan era saw the rise of the great playwrights and poets England would soon come to celebrate. Like her father, Elizabeth was a gifted scholar, and had a passion for the arts. Her court was constantly filled with musicians and singers, while plays, or royal masques as they were called, also gained immense popularity.

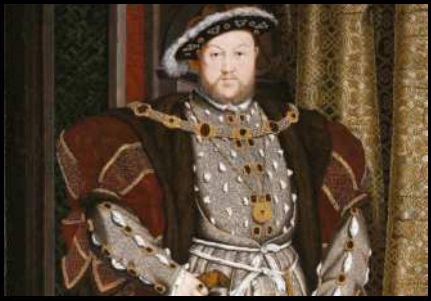
In 1576 the first play house in London was opened in Shoreditch, just north of the city wall, by James Burbage, an actor turned businessman. Twenty-two years later in 1598 his son Richard, along with his acting company, would dismantle this playhouse, and transport it to Bankside, in Southwark, where it would be reconstructed as the Globe Theatre. Under the patronage of Henry Carey, First Baron Hunsdon, The Lord Chamberlain's Men playing company gave regular performances at The Globe and at Elizabeth's court.

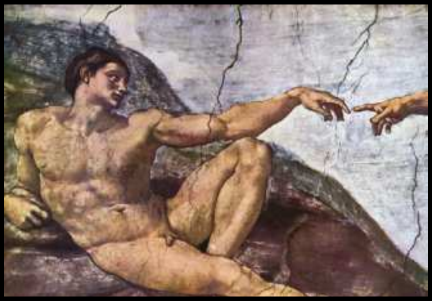
During the latter part of the 16th century, London's population soared to well over 200,000 (a huge number at the time). As people travelled to the capital to seek their fortunes, some of the greatest writers and artists became inevitably drawn to the booming theatre scene of Bankside. As well as Shakespeare, Thomas Dekker, Ben Jonson, Samuel Daniel, Christopher Marlowe and others all found great success in the playhouses, where there even emerged a rivalry between playing companies and theatres.

Just as England's cultural Renaissance came much later than its continental cousins', so too did it begin its exploration overseas long after its rivals. While Spain in particular had been reaping the benefits found in the New World for decades, it wasn't until Francis Drake's expedition to circumnavigate the globe began in 1577, that England began to reap the benefits of overseas exploration. New, more efficient ship designs made

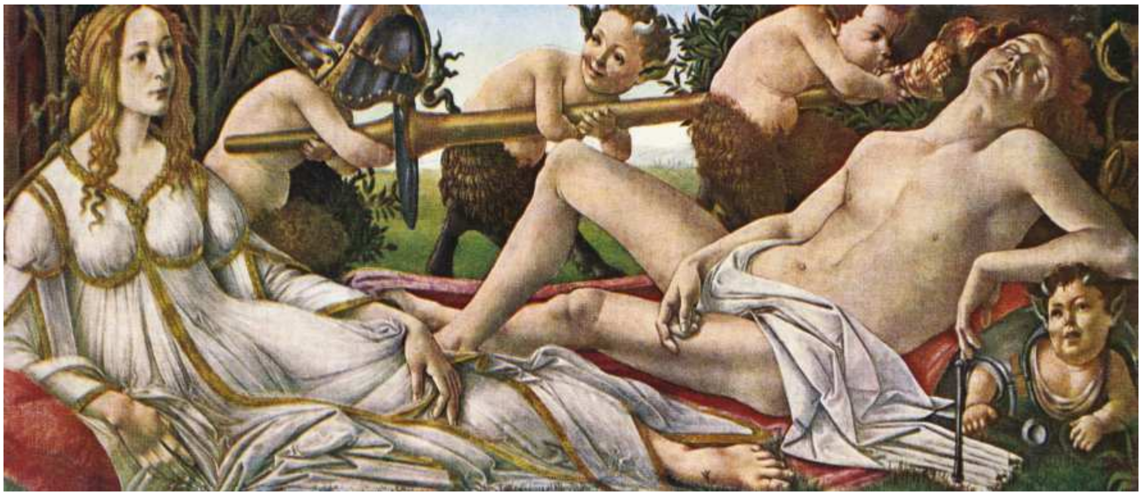
Europe's two Renaissances

How the movement differed in England and Mainland Europe

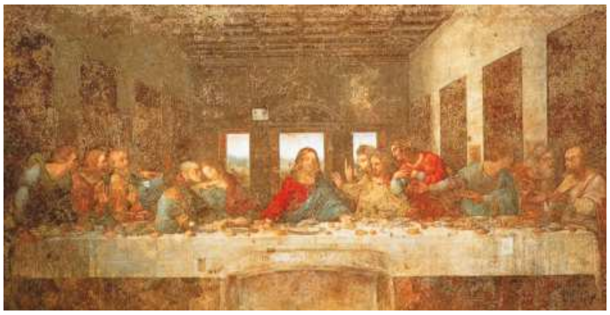




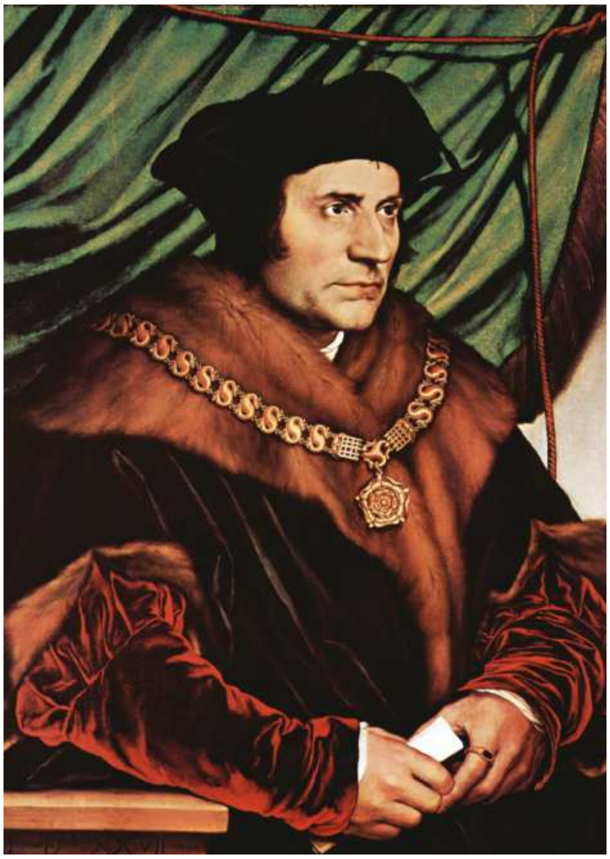
	England	Mainland Europe
Music	After the English Reformation, the place of music in church and in life changed dramatically. The leading composers of the Tudor era were all connected inextricably with the church, or the royal court, or both. With the emergence of printed sheet music, the flow of compositions from the continent steadily grew more and more in popularity.	Groups of musicians on the continent could travel between territories much easier than their English counterparts, and would perform at royal courts and noble houses in several different countries. Franco-Flemish composers such as Josquin des Prez were incredibly popular in the early stages of the 16th century, and were still heavily influenced by Catholic mass.
Art	Many of the most famous painters to work in England were from the continent. For example Hans Holbein The Younger, a German artist, produced one the most famous portraits of Henry VIII in 1536. Henry also commissioned copies to be made of tapestries designed by Raphael, which had previously hung in the lower walls of the Sistine Chapel, in the Vatican.	Among the most celebrated sculptures, portraits and religious paintings that we now consider to typify the Renaissance, the majority grew out of the traditions and practices of Florence's artist guilds. Soon the Florentine school – as it became known – produced painters and sculptors that were eagerly sought after by all of Europe's nobility and royalty.
Architecture	As the most popular and sought-after architectural styles in the era were drawn from Italian influences, as with portraiture, many royal building projects commissioned Florentine craftsmen. It wasn't until much later, with the likes of Inigo Jones, that English designs, albeit with heavily Italian influence, were popularised in London.	Drawing from the ridiculously fertile crop of artistic talent from Florence and elsewhere, the rich and the powerful all commissioned the finest visionaries for their building projects. Much Renaissance architecture was typified by huge commanding domes and soaring pillars, in imitation of classical Roman buildings.
Literature	English courtly poetry thrived in the 16th century, with manuscript verse passed between small groups of close friends, establishing new trends in written English. Soon after the introduction of the printing press, literacy levels throughout the country soared, and London's theatres housed some of the Renaissance's most brilliant writers.	Interest and interpretation of classical writers such as Homer and Ovid, sparked a new trend of translation and re-invention across the continent. The foremost change to literature on the continent came with the production of the Gutenberg Bible, the first book to be mass-produced in Europe.
Medicine	Alchemy, quack doctors, even wise women and witches still made up the majority of medical authorities in Tudor England, which was a similar situation to the continent. Physicians were available for only the very wealthiest in society, and commonly they were immigrants from abroad, such as Dr Rodrigo López, Elizabeth I's personal physician.	Among the greatest advances in medicine and the studies of human anatomy came from the mainland. Though da Vinci was dissecting and analysing human bodies much earlier, his work was not used to further the understanding of surgery or physiology. Andreas Vesalius was among the first doctors to use dissection as a means to understand the human body.



Sandro Botticelli was one of Florence's most prolific painters and was hugely influential throughout the continent



Painted directly on the wall of an abbey, da Vinci's *Last Supper* was unstable from the beginning and has been restored so many times many believe none of the original remains



Sir Thomas More was one of the foremost scholars in Henry VIII's court, and one of the most celebrated humanist writers in the era

vessels stronger, faster, and easier to handle. This made captains more daring and crews more willing to risk the vastness of the Pacific and beyond.

Spices, sugar and tobacco flooded into London, bringing with them the opportunity for even more profit, while gold stolen from Spanish treasure ships was returned from royally sanctioned privateer missions. New companies and businesses sprang up, and new monopolies granted by Elizabeth created vast fortunes for the profit of London's merchants.

However, not every aspect of the Elizabethan Renaissance was fixed in the material world. The Queen's close advisor and personal astrologer Dr John Dee is one of the most celebrated and controversial scholars in the Elizabethan court. A brilliant mathematician, philosopher and alchemist, Dee struck a peculiar balance between science, magic and the divine in his work.

As new trade links with far-off Russia in the east and the Americas in the west were required, Dee's skills were called into service, using his knowledge of the night sky to help teach captains new methods of navigation. Dee was even consulted by Pope Gregory XIII, who introduced the Gregorian Calendar in 1582, though England would not adopt this until 1752.

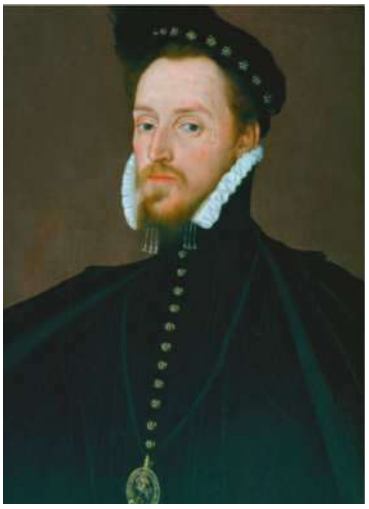
The death of Elizabeth in 1603 marked the end of the Tudor era in England, and in many ways the end of its unique Renaissance. By the beginning of James I's reign, Europe was already beginning to change once again. As the Reformation spread, and Protestant states began to grow in power, a Catholic counter-reformation would eventually bring about the Thirty Years' War. As fighting and unrest ravaged the continent, funding turned from the arts and literature, to arms and armies. In England, the arts would have their own unique struggle against increasingly powerful puritan elements in London, who in particular saw the play houses of Southwark as bawdy pits of vice. Soon a new civil war broke out, this time between parliament and the monarch, and the play houses were closed for decades. As it did some two hundred years previous, the country would be irreversibly changed by war, and remade in its aftermath – another rebirth was at hand.

Patronage in the Renaissance

During the Renaissance period, royalty, nobility and even the increasingly wealthy merchant class all desired to possess the finest art to display their status. They also commissioned portraits of themselves and their family, to become 'immortalised' on canvas, dressed in their best clothes and even surrounded by mythological or religious iconography. Poets and writers also often found rich patrons to fund their work, who in return would receive plays and poems dedicated to them. Some writers would even live with their patron, serving as tutors to the family's children.

For many skilled artisans the ultimate patronage was that of a monarch, from whom the greatest accolades and financing was to be sought. Shakespeare's theatre company was initially patronised by Henry Carey, First Baron Hunsdon, and accordingly became known as the Lord Chamberlain's Men. After James I's ascension to the throne in 1603, the king patronised the company himself, thereby dubbing it The King's Men. Through this sponsorship the company went on to flourish, and in turn meant that the company could run more performances.

In Florence much of the work by some of the most famous humanists, scholars, artists and poets, was accommodated by Lorenzo de Medici, the de facto ruler of the city. Da Vinci, Botticelli, Angelo Poliziano, Michelangelo, to name just a few, all benefited greatly from the political connections, influence and power Lorenzo could lend them. Skilled artists were also regularly employed by the church. Michelangelo's 'David', for instance, was an original commission by the Cathedral of Florence, while da Vinci's *Last Supper* was painted for the Santa Maria delle Grazie, in the city of Milan.



As Lord Chamberlain, Henry Carey became the patron of Shakespeare's company, which accordingly became known as the Lord Chamberlain's Men

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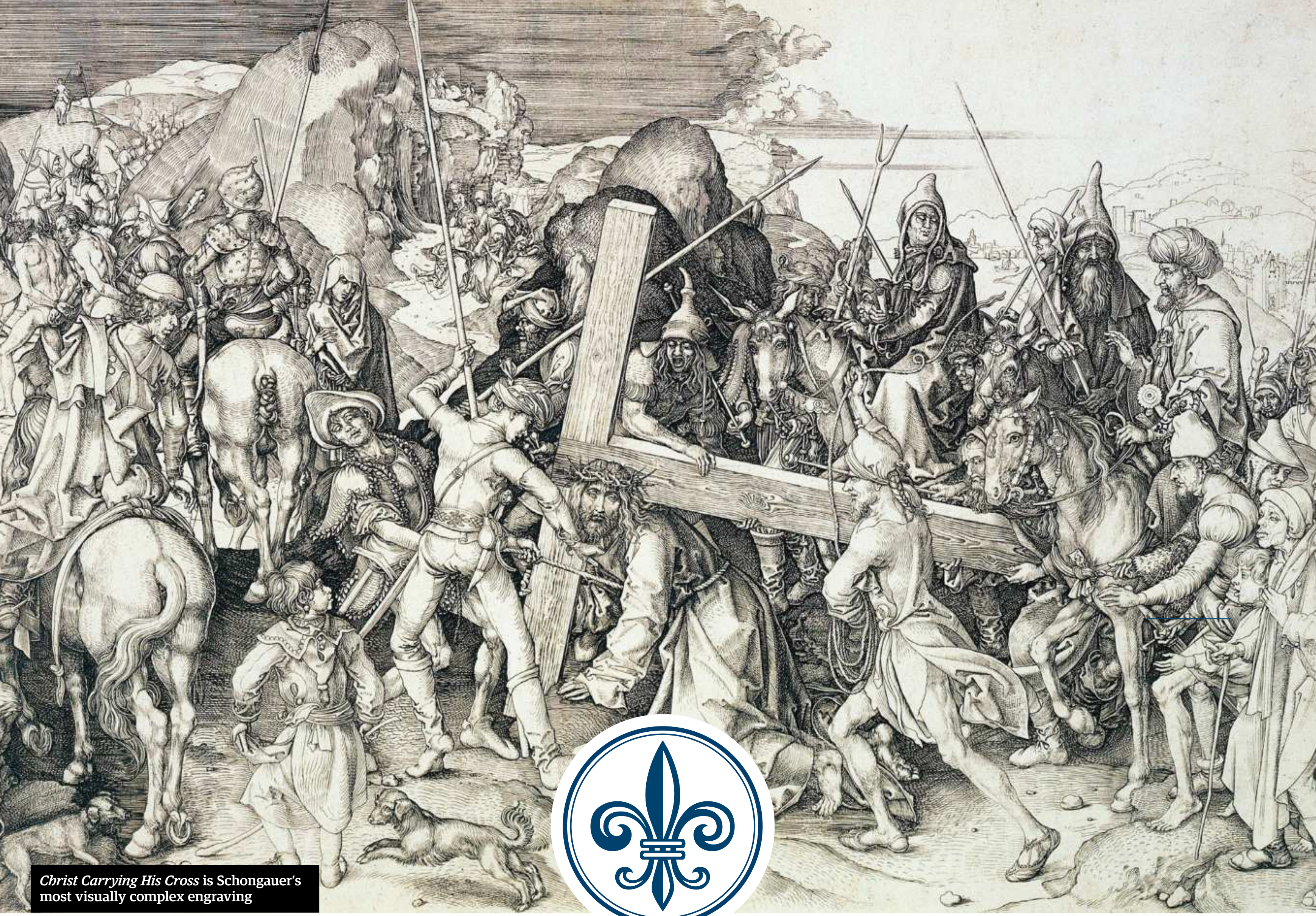


Christ Carrying His Cross is Schongauer's most visually complex engraving

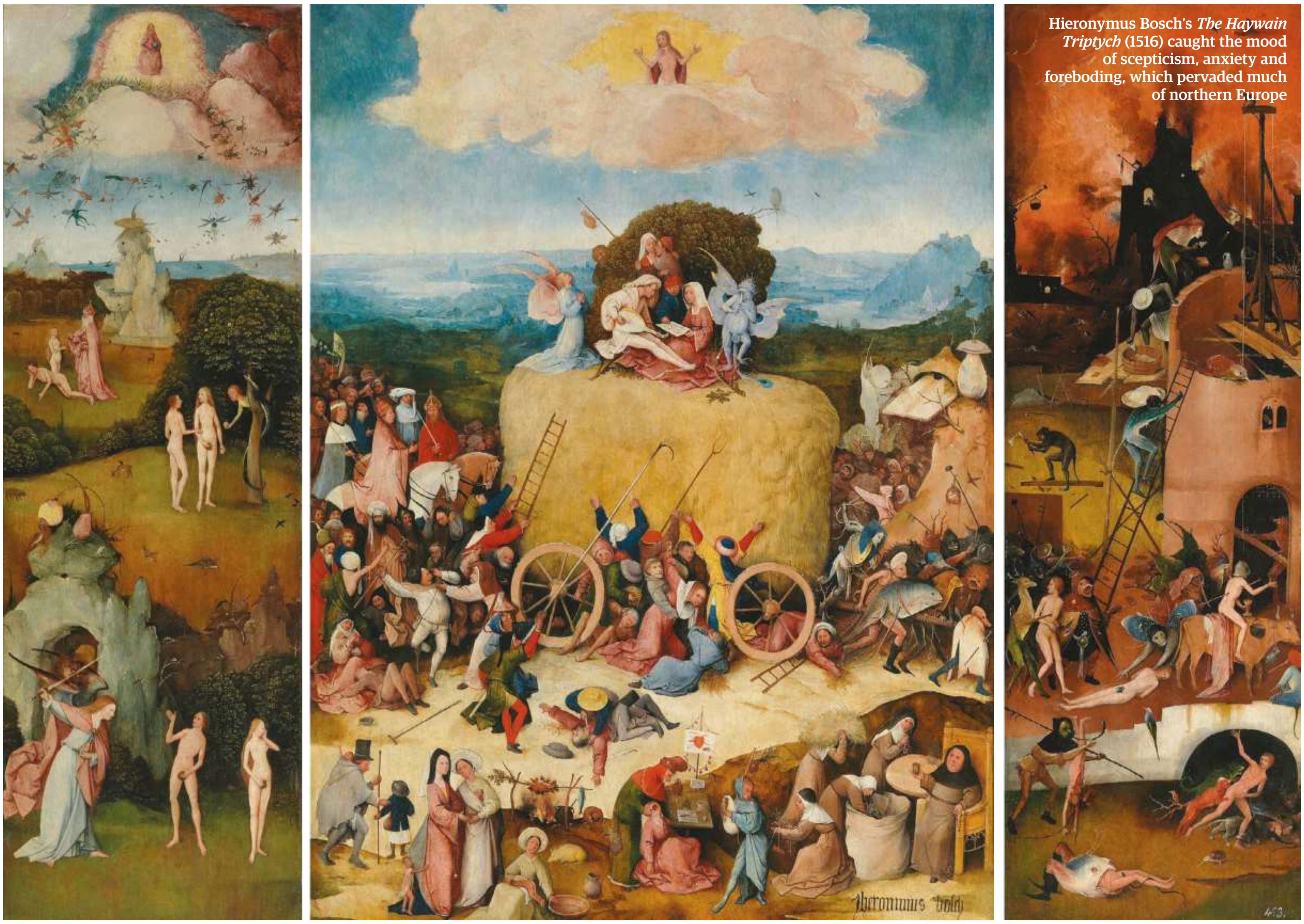
The Renaissance in Europe

Written by Derek Wilson

New knowledge and new inspiration were not restricted to Italian artists. Wherever patrons were to be found willing and able to commission works of art, painters, sculptors and architects explored new means of expression

While architects of the stamp of Donato Bramante were designing neoclassical churches and public buildings in Rome, Milan, Florence and other Italian cities, in the north, Gothic style reached its apogee in the High Gothic. The magnificent, graceful cathedrals, abbeys and parish churches built throughout northern Europe were, for the most part, ongoing projects, the work of generations of master masons rather than the products of individual architects, working to preconceived designs. Between c.1100 and c.1550, these buildings grew in response to new needs and fresh ideas.

It was in England that the potential of Gothic architecture was ultimately achieved in the Perpendicular style. Increased wealth based largely on the wool trade enabled new churches and chapels to be built with breathtaking daring. Between 1450 and 1550, several ecclesiastical buildings were conceived in toto, as complete, unified works of art. Windows became much wider, the glass supported almost miraculously by slender stone columns. Pillars, now smaller in girth, resembled soaring pine trees whose branches spread out overhead in delicate fan tracery. The analogy is apt because masons' work had an organic inspiration taken from the forests that still covered much of the country.



Hieronymus Bosch's *The Haywain Triptych* (1516) caught the mood of scepticism, anxiety and foreboding, which pervaded much of northern Europe

When we turn from the monumental to the miniscule, we discover the same close involvement with nature reflected in the work of manuscript illumination. Psalters and books of hours (containing prayers, gospel passages, psalms and other aids to devotion) had their borders lovingly decorated with flowers and intertwined fronds, radiant with gilding and bright colours. The most revolutionary innovation of the Renaissance era began at Mainz in the German Rhineland when Johannes Gutenberg started producing printed sheets in 1439. The impact of cheap, mass-produced books made the interchange of ideas among scholars easy. It also led rapidly to woodblock printing of pictures to accompany text and as standalone illustrations. By 1500, print shops were to be found in 270 cities throughout Europe. They completely changed the way people thought. Some books were highly subversive of European culture and institutions. Sebastian Brant (1457-1521) of Strasbourg mocked contemporary institutions in his *Ship Of Fools*, and Dutch Desiderius Erasmus (1466-1536), the leading humanist scholar of the age, followed suit with *In Praise Of Folly*. Both were runaway bestsellers. Their mood was caught by Hieronymus Bosch's (1460-1516) *The Haywain Triptych*, which depicted all sorts and conditions of people trundling the wagon towards inevitable doom. Such ideas paved the way for the Reformation.

Among the early masters of woodblock and copperplate engraving was Martin Schongauer (c.1445-1491) of Colmar in Alsace. Michelangelo was one of his many admirers. When we look at his *Road To Calvary* it is not difficult to see why. In a space of 27.9 by 42.2 centimetres, he has arranged more than 50 figures, each with its own distinct function in the dismal cavalcade. Yet the page is not crammed with a jumble of men, women, children and animals. The artist creates an illusion of movement, while the fallen Christ remains the centre of the composition.

The greatest print maker of the Renaissance was Albrecht Dürer (1471-1528). His frightening version of *The Four Horsemen Of The Apocalypse* (1498) is well known, but later works display his increasing mastery of a difficult medium. With only a group of burins (engravers' cutting tools), the challenges were considerable: how to display various textures, show the play of light and shade, outline the contours of human and animal bodies and so on. He worked in various mediums - pen and ink, watercolour and oil paint, as well as engraving - and his prodigious output embraced religious works, portraiture, animal studies, mythology and landscapes. He was, in fact, one of the first to treat landscape as a subject on its own, rather than as a background to the portrayal of religious events.

Dürer's home town of Nuremberg had strong contacts with the Republic of Venice. The road between the two cities was the main mercantile link between north and south. Dürer visited Venice twice during the early years of the 16th century, and executed commissions there. He met and learned from some of the Italian masters

> "By 1500, print shops were to be found in 270 cities throughout Europe"

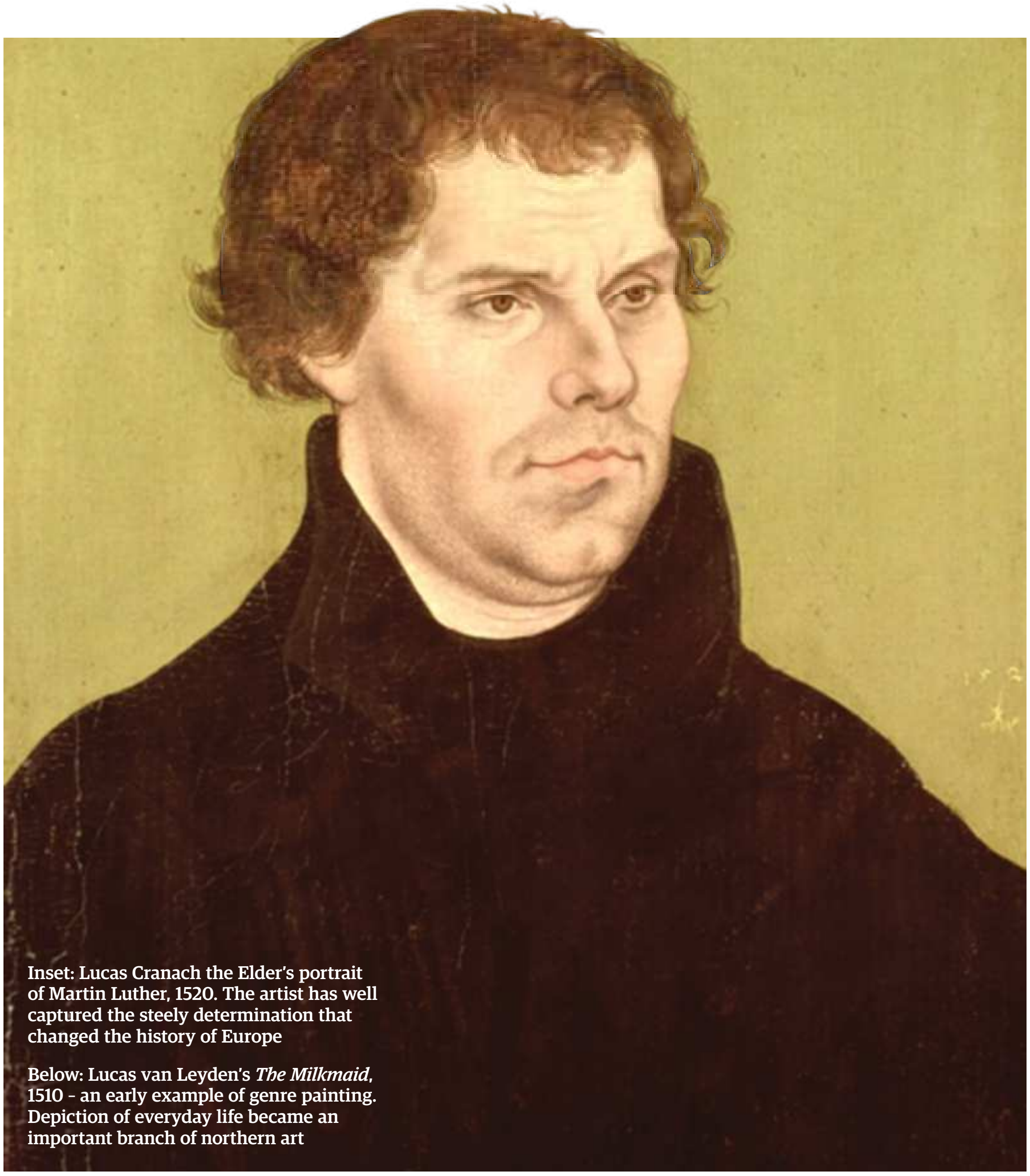
with whom he long remained in correspondence. He was particularly influenced by Mantegna and Raphael (who had, at last, cracked the problem of perspective in such works as *The School Of Athens*). But the learning process was not a one-way street; Dürer was widely respected and copied by his peers south of the Alps.

Dürer's involvement in the international art scene also took him to the Netherlands in 1520-21. What Venice was to Mediterranean and eastern commerce, Antwerp was to the cross-Channel trade with England and the new Atlantic routes now being opened up by Spanish and Portuguese mariners. Here, eager patrons were to be found among the growing middle class, and Dürer was far from being the only foreign artist drawn there. Several Italians were among the artistic communities in Antwerp, Bruges, Brussels and other cities. The existence of both commercial and artistic networks ensured the sharing of new ideas. In 1506, when a Flemish wool merchant visiting Florence saw Michelangelo's latest version of the *Madonna And Child*, he bought it and had it shipped back to his local church in Bruges.

"Commercial and artistic networks ensured the sharing of new ideas"

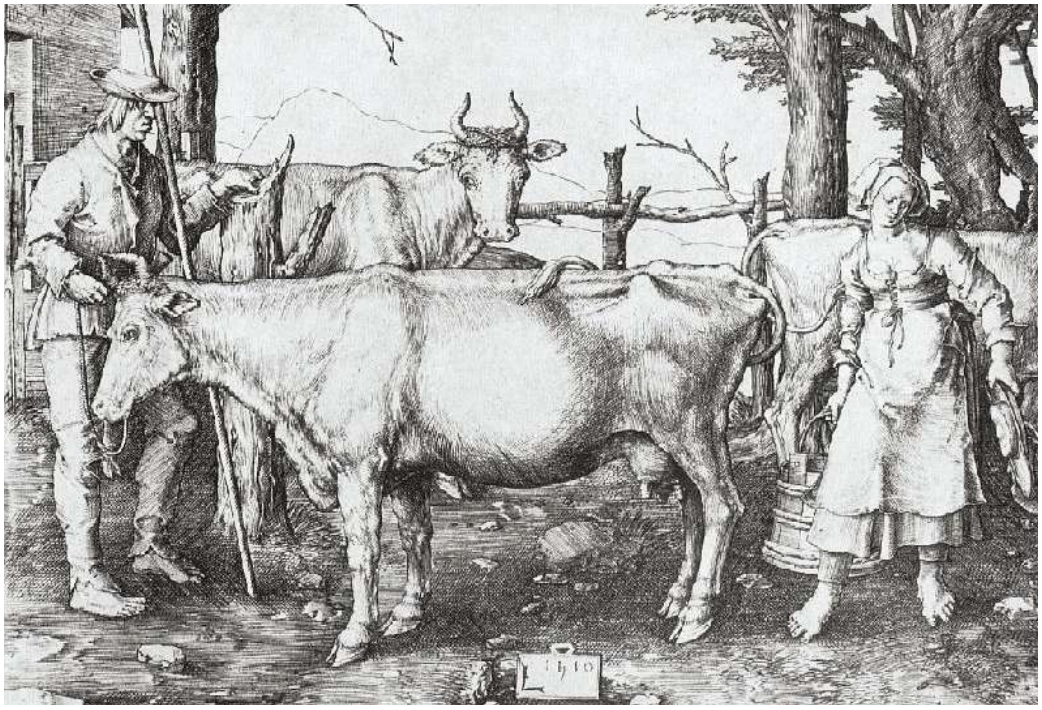
Another German artist who followed a career not dissimilar to Dürer's was Hans Holbein the Younger (1497-1543). His home was in Augsburg, the financial centre of Europe, dominated by the banking families of Fugger and Welser. Hans was born into a family of artists, which meant that he and his elder brother were brought up in their father's atelier, working on commissions for everything from altarpieces and jewellery designs to trade signboards and decorated house fronts. In 1516, bankruptcy forced the family to move to Basel. In this liberal, free-thinking city, young Hans, who was more talented than his father, found an atmosphere conducive to his advancement. Erasmus made his home there, and was only one of several scholars and artists of all persuasions who congregated there. But times were changing.

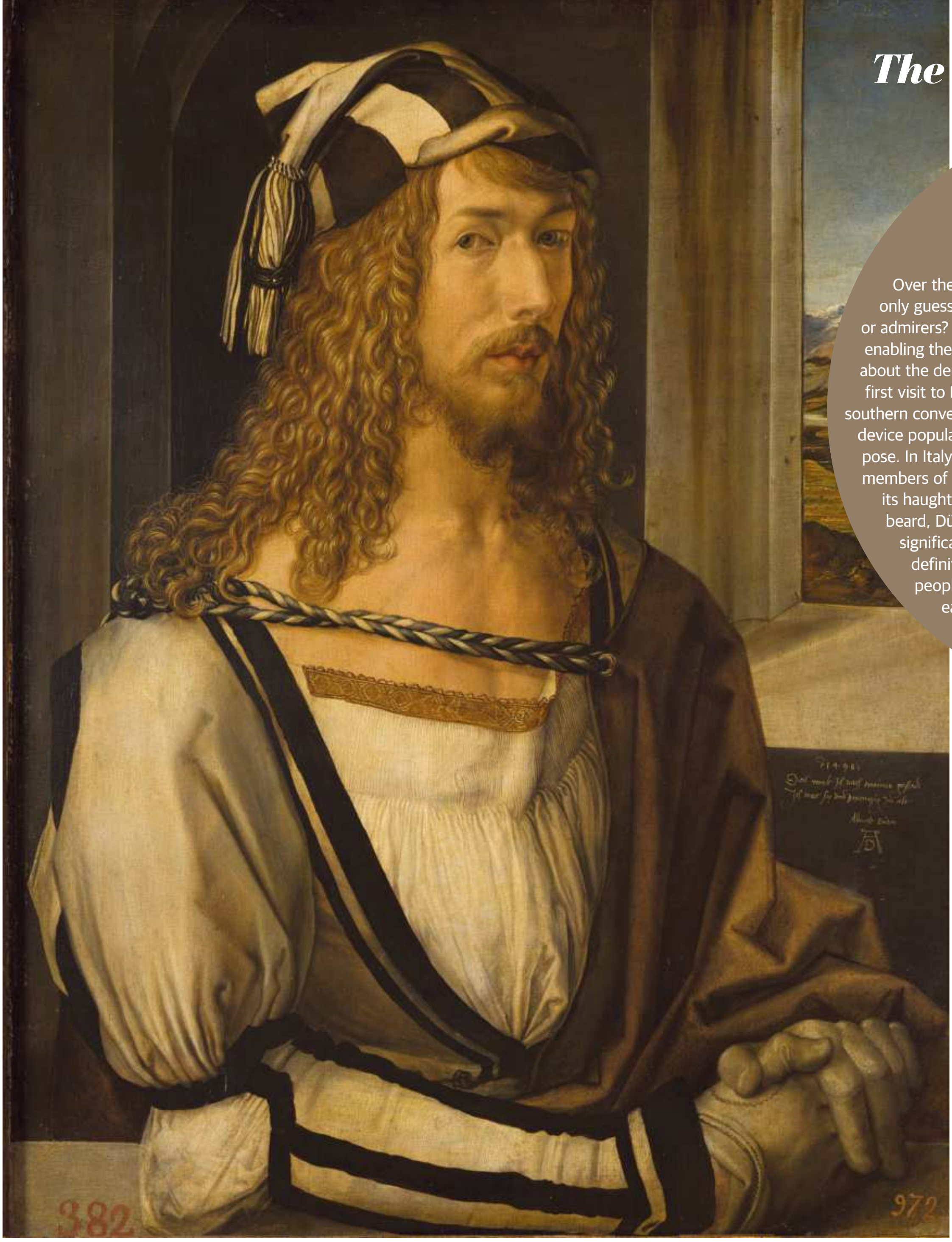
In 1517 in distant Saxony, a monk called Martin Luther mounted a challenge to Catholic dogma that was the beginning of the Reformation. Hans junior was now a young man whose precocious gifts were resulting in a variety of commissions. But the market was changing rapidly. As Protestantism spread, its more extreme advocates were proclaiming that religious art was idolatry. One of the cities that fell under their control was Basel. This put a distinct dampener on the demand for religious works. Holbein had to look farther afield for a patron. Thanks to Erasmus, who wrote a letter of recommendation to his friend, Thomas More, Holbein was well received in England in 1526. He



Inset: Lucas Cranach the Elder's portrait of Martin Luther, 1520. The artist has well captured the steely determination that changed the history of Europe

Below: Lucas van Leyden's *The Milkmaid*, 1510 – an early example of genre painting. Depiction of everyday life became an important branch of northern art





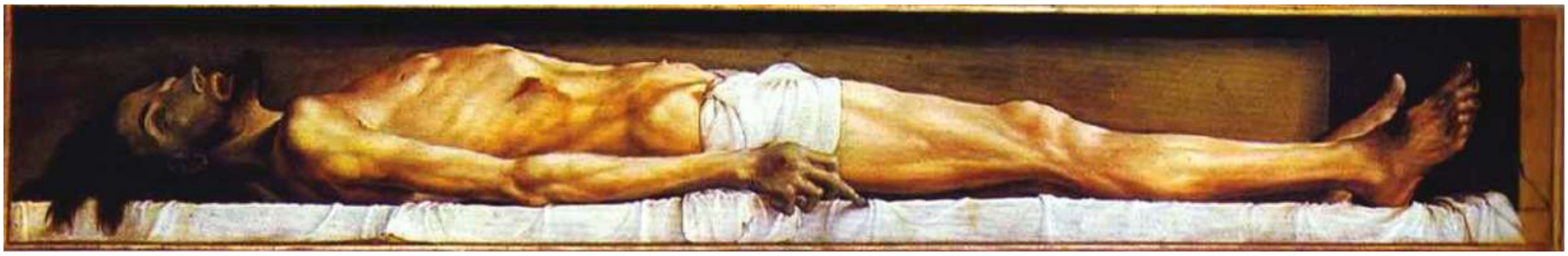
Albrecht Dürer: Self-Portrait 1498

Over the years, Dürer painted a number of self-portraits. We can only guess at the reasons for this activity. Were they gifts for friends or admirers? Were they for self-promotion? Were they painterly exercises, enabling the artist to interpret his subject freely without having to worry about the demands of a client? This particular painting was made after his first visit to Italy, and it certainly shows the influence of his contact with southern conventions. He is shown sitting beside an open window, a common device popular with Florentine painters. Yet, there is more than this to the pose. In Italy, Dürer discovered that artists were honoured and respected members of society rather than mere craftsmen. In his new portrait, with its haughty expression, extravagant fashionable dress, long hair and beard, Dürer seems to be making a bid for recognition. Particularly significant are the expensive gloves he is wearing. Gloves were definitely an accoutrement reserved for the upper classes – people who did not work with their hands. Only two years earlier Dürer had executed a portrait of the Elector Frederick the Wise of Saxony. The pose in both paintings is almost identical.

spent most of the rest of his life there, becoming official painter to Henry VIII, and producing the superb series of portraits of the king and members of his court that we know so well.

The impact of the Reformation on art was twofold. As conflict grew between Catholic and Protestant states, and between confessional groups within states, art became a propaganda vehicle. Holbein was one, but only one, artist who produced, at government behest, prints lampooning the pope and illustrations for vernacular Bibles. In Germany, Lucas Cranach (1472-1553) brought painting to the aid of the new theology with works such as *The Law And The Gospel*, seeking to counteract the imagery that had been used for centuries by the old church to implant Lutheran doctrine in the minds of worshippers.

The other result was the divorce of sacred and secular, which allowed the development of subject matter such as portraits, landscapes, still life and genre works (scenes from everyday life).



Hans Holbein the Younger: The Dead Christ (1520-22)

This is Renaissance realism at its most direct and forceful. Traditional depictions of post-Crucifixion scenes had been intent on conveying different messages. When painters, at the behest of their ecclesiastical clients, portrayed the 'descent from the Cross' or the 'entombment', they showed distraught disciples and Jesus' mother caring reverently for the body. They invited the beholder to identify with those first followers of Christ, the original members of the Church. They suggested the viewer's appropriate response. Holbein would have none of this. He presents stark reality, and leaves the spectator to make of it what he or she will. He asks the question: What happened between Good Friday and Easter Sunday? The answer is: Death. The figure lying in a coffin-shaped space might be any man. Corpses were occasionally dragged out of the Rhine. Perhaps this was one such, fortuitously available for Holbein to study. Perhaps he found his model in an anatomy school. The message was simple but profound: this God-man died. This underlines Christ's full humanity, and makes the Resurrection more remarkable. Here, Holbein shows himself to be a man of Renaissance and of the emerging Reformation. One turned away from medieval imagery to locate religious events in the real world. The other stressed the importance of the plain Bible text, unadorned by theological accretions. Renaissance realism has different aspects. It may be simply portraying something accurately, making it familiar. Or it may startle the viewer into a new understanding. In the north, there was a long tradition of strange, sometimes gruesome, religious images. Holbein brings these two realisms together, inviting the viewer's personal response. That is why this painting has had such an impact down the centuries.

10 WAYS THE RENAISSANCE CHANGED THE WORLD

How the cultural, political, scientific and intellectual explosion throughout Europe between the 14th and 17th centuries has affected the world today

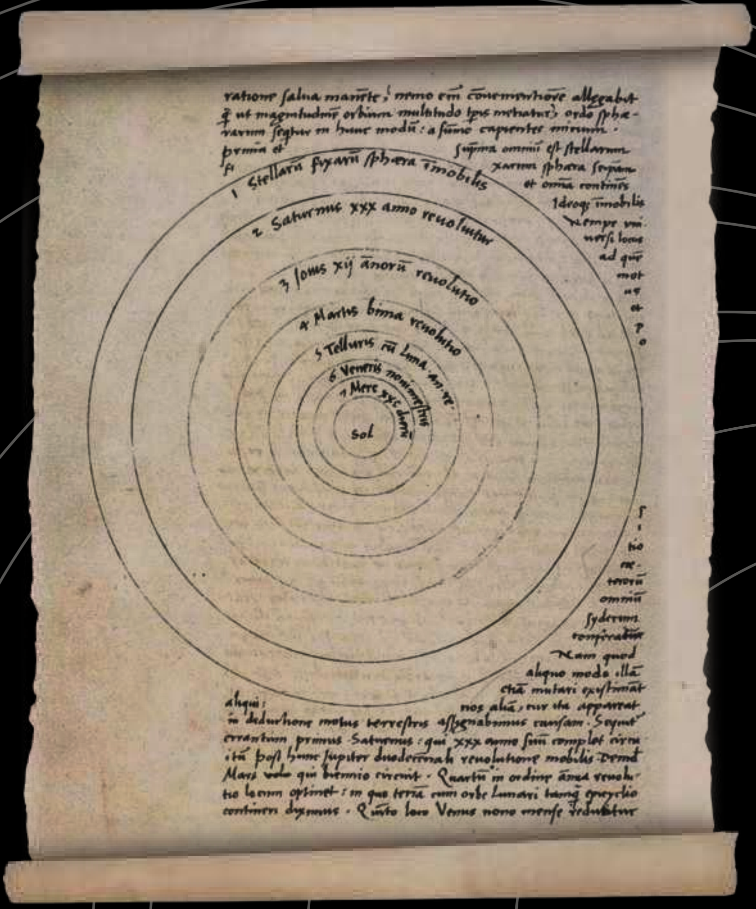
1 Stellaru fixaru sphaera immobilis
2 Saturnus xxx anno revolutur
3 Jovis xij annoru revolutio
4 Martis bima revolutio
5 Telluris cu Luna
6 Veneris
7 Merc
Sol

FREE THINKING

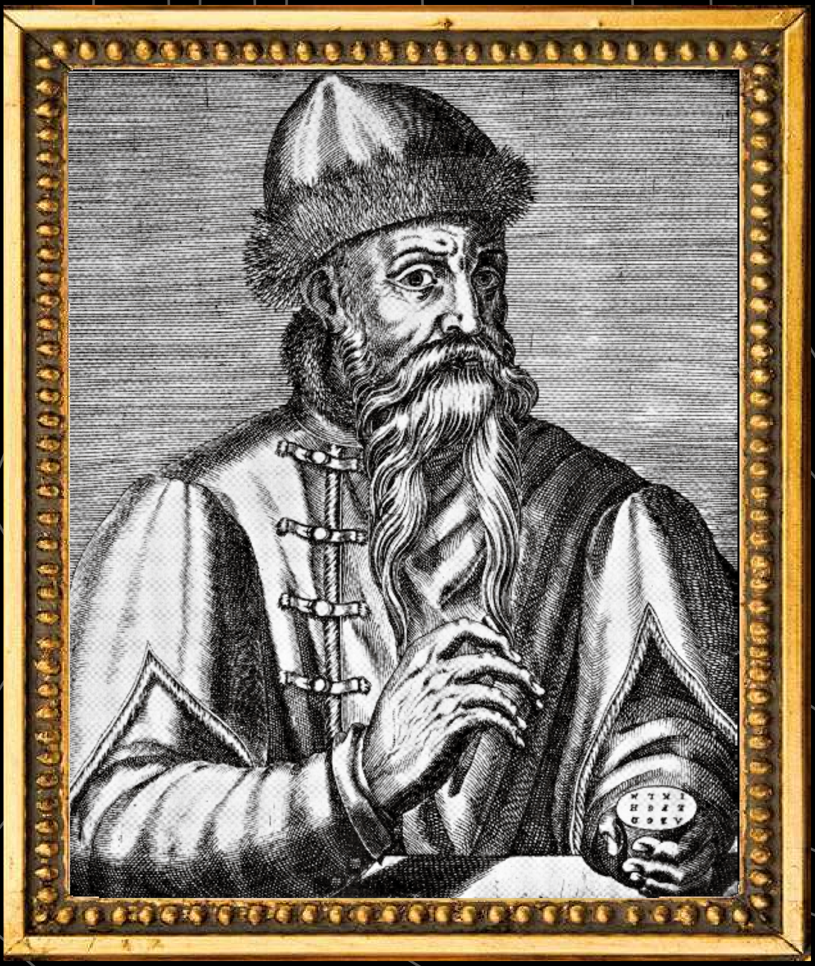
In studying classic texts by the likes of Plato and Aristotle, Renaissance humanists were able to break free from the medieval tradition of devoting their lives to the church and focus more on personal interests rather than religious demands. And the authority of the church was challenged in a number of books that were published during the Renaissance, such as *On The Revolutions Of The Celestial Spheres* by Polish canon and astronomer Nicolaus Copernicus. Copernicus's revolutionary book completely overturned the old belief that the Earth lay at the centre of the universe, and instead told how the Earth, along with all of the other known planets, rotated around the Sun. The book was instantly condemned by the Catholic Church when it was published in 1543.

Within a month of Copernicus' book being published, another book was printed that would transform another area of science: *On The Structure Of The Human Body*, by Andreas Vesalius. This book marked the beginning of modern observational science and anatomy and featured methodical observational work on the human anatomy carried out by Vesalius himself, stealing the bodies of the diseased and the condemned to carry out his research.

Many more books would soon follow that also undermined the notion of a divinely ordered world and reveal individuals as being complex mechanisms of flesh and bone, as well as explore other disciplines of scientific enquiry such as physics, mathematics and geography. The world, it appeared, wanted answers and there were people bold enough to challenge the status quo in order to provide them.


1 Stellarum fixarum sphaera immobilis
2 Saturnus XXX anno revolvitur
3 Jovis XII annorum revolutio
4 Martis bima revolutio
5 Telluris cum Luna anni
6 Veneris nono mense
7 Mercurii LXXX dierum
Sol

Copernicus demonstrated that the Sun lies at the centre of the cosmos

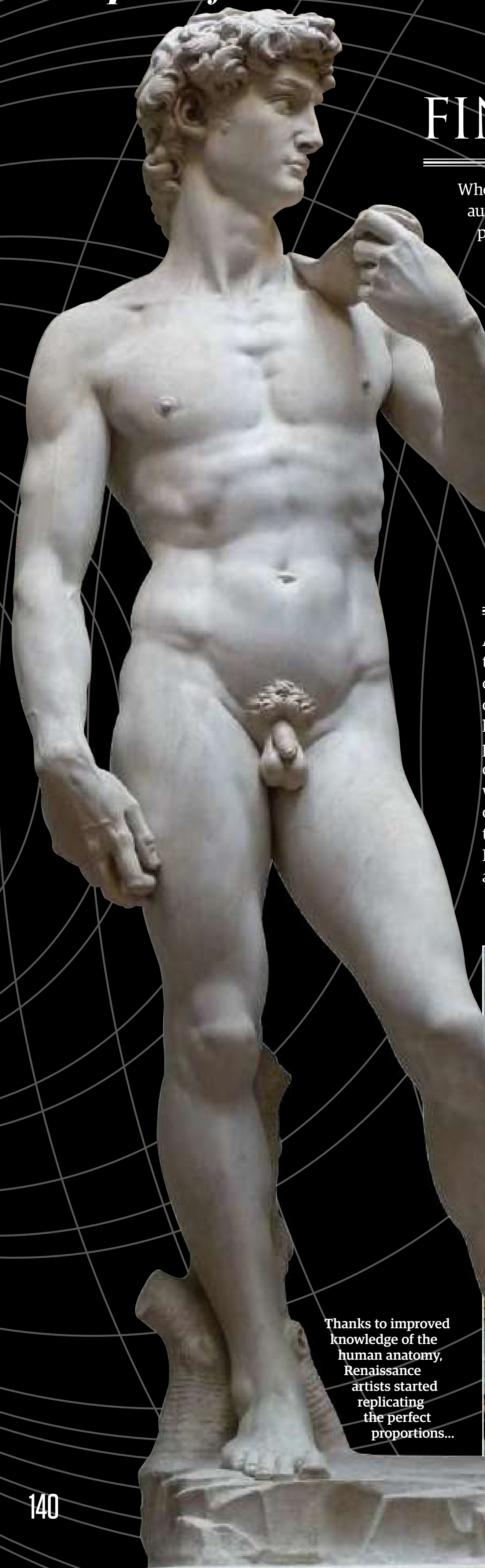


THE SPREAD OF KNOWLEDGE

Of course, the publication of books, such as those by Copernicus and Vesalius wouldn't amount to much if they weren't effectively distributed to the masses – and this is where the German, Johannes Gutenberg's, contribution to the Renaissance comes in – the advent of the printing press. Prior to the invention of the printing press circa 1440, texts had to be tediously hand written and education was reserved solely for the wealthy who could afford it. However, when the printing press came along, it revolutionised communication and provided the middle classes with a means of educating themselves, and scientists with a means to easily distribute and share their work, leading to faster and more accurate breakthroughs. The invention of the printing press also meant that new ideas could be spread rapidly throughout Europe, which would then inspire others to observe, question and come up with their own theories, leading to a snowball effect of knowledge.

> "The invention of the printing press... meant that new ideas could be spread rapidly throughout Europe"

Johannes Gutenberg's invention meant that texts would be printed, instead of painstakingly written, and the knowledge more effortlessly spread



Thanks to improved knowledge of the human anatomy, Renaissance artists started replicating the perfect proportions...

FINE ART

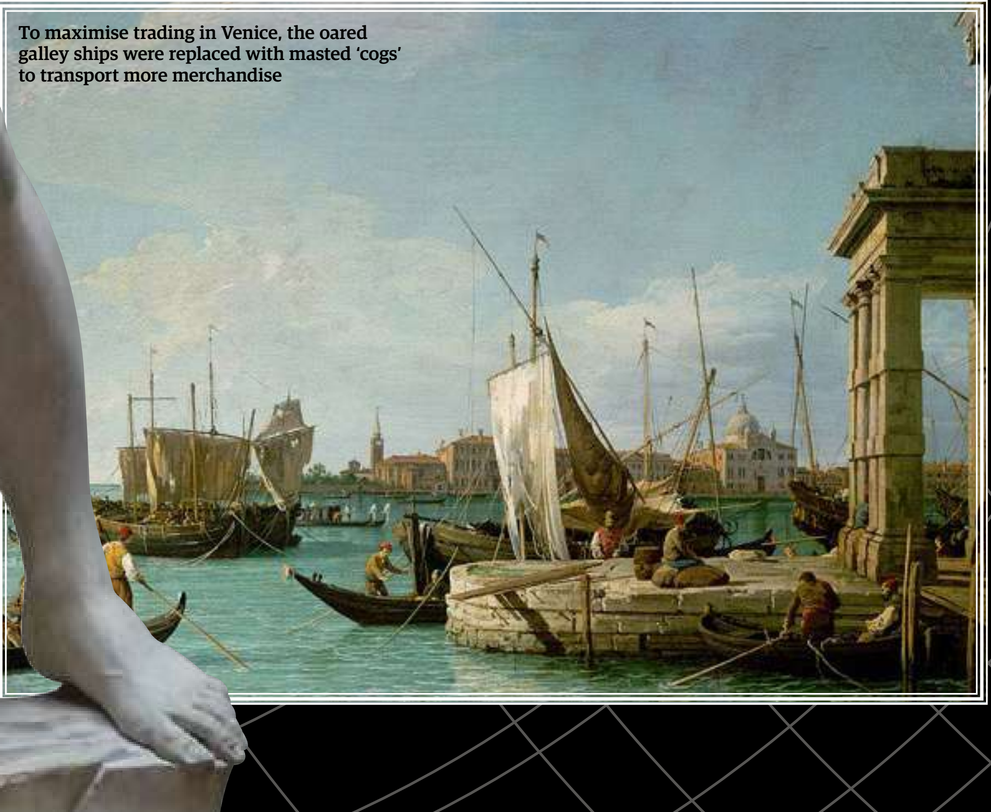
When we think of the word, 'Renaissance', we automatically think of art, most notably that period's outstanding contribution to the arts. It was during the Renaissance that artists such as Donatello, Michelangelo, Titian and da Vinci moved away from the more traditional depictions of religious figures and iconography and instead began to study the human body in greater detail. Taking great influence from the humanists of the day, the Renaissance artists and sculptors drew inspiration from the Gothic styles of Greece and ancient Rome and, thanks to an improved knowledge of human anatomy, managed to start replicating the perfect proportions of the body and convey far more emotion and expression from their works to capture the beauty of the world as it really was. As such, many of the most notable pieces from this era broke new ground in terms of proportion, colour and texture, and have continued to remain greatly revered the world over.

> "Artists... began to study the human body in greater detail"

MODERN CAPITALISM

Another characteristic of the Renaissance is the expression of wealth and the consumption of luxury goods. The changes in demand and consumption from the 14th century onwards have been heavily debated by economic and political historians, but many believe the concentration on urban life and accumulation of wealth in the hands of the small, yet rich elite came as a result of the death, disease and war of the previous centuries (events such as the Black Death, the Muslim-Christian conflict in Spain and North Africa, the Genoese-Venetian wars and the Hundred Years' War) that created a recurrent pattern of inflation and deflation.

Places like Venice saw the opportunity and capitalised on the growing demand for luxury goods by developing new ways of moving larger quantities of merchandise. These methods included phasing out their older, oared galley ships in favour of round-bottomed, masted ships that could transport three-times as much product. As the amount of merchandise and the speed at which it could be distributed increased, the ways in which business was transacted also changed and methods of balancing the import and export of both essential and luxury international goods and calculating credit, profit and rates of interest had to be adopted.



To maximise trading in Venice, the oared galley ships were replaced with masted 'cogs' to transport more merchandise

NEW TOOLS OF NAVIGATION

In 1415, the Portuguese captured the Muslim city of Ceuta in Morocco, providing a springboard for expansion down the West African coast and allowing them to break into the trans-Saharan trade routes (thus avoiding the crippling tariffs of the overland and seaborne trade routes. They followed this up by claiming Madeira, the Azores and the Cape Verde Islands. Once settled in the Azores they started sailing south into, according to Ptolemy's World Map, uncharted territory. As they reached the limit of Mediterranean traditions of navigation and map-making, the Portuguese employed the services of Jewish scholars to develop solar tables, star charts and astrolabes to calculate latitude according to the position of the Sun, Moon and stars. By the 1480s, these new tools were so successful that they enabled the Portuguese to sail around Sierra Leone and establish trading posts along the coast of Guinea. The new commercial encounters created a big impact upon the culture and economy of the communities in West Africa, Portugal and mainland Europe, where copper, horses and cloth were traded for gold, ivory and ebony. The gold shipped back to Portugal allowed the country to issue the 'cruzado', the first national gold coin.

In 1488, Bartolomeu Dias announced to a Lisbon court that he had sailed around the southernmost tip of Africa and in doing so realised that the coast in this area turned northwards and north-eastwards, providing hope of the discovery of Asia (as a result Dias named it the 'Cape of Good Hope'). This news rendered Ptolemy's map of the world obsolete and European voyagers realised they could no longer rely on old navigational methods.

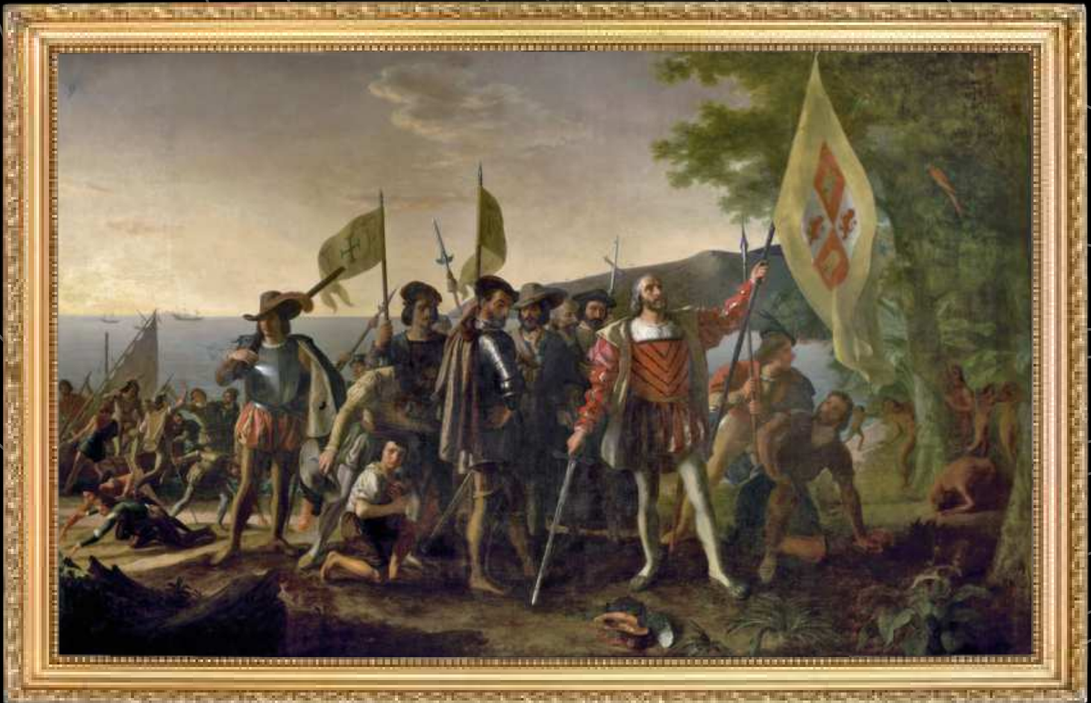
As Renaissance sailors looked to explore more of the world, Ptolemy's map became increasingly redundant

THE DISCOVERY OF AMERICA

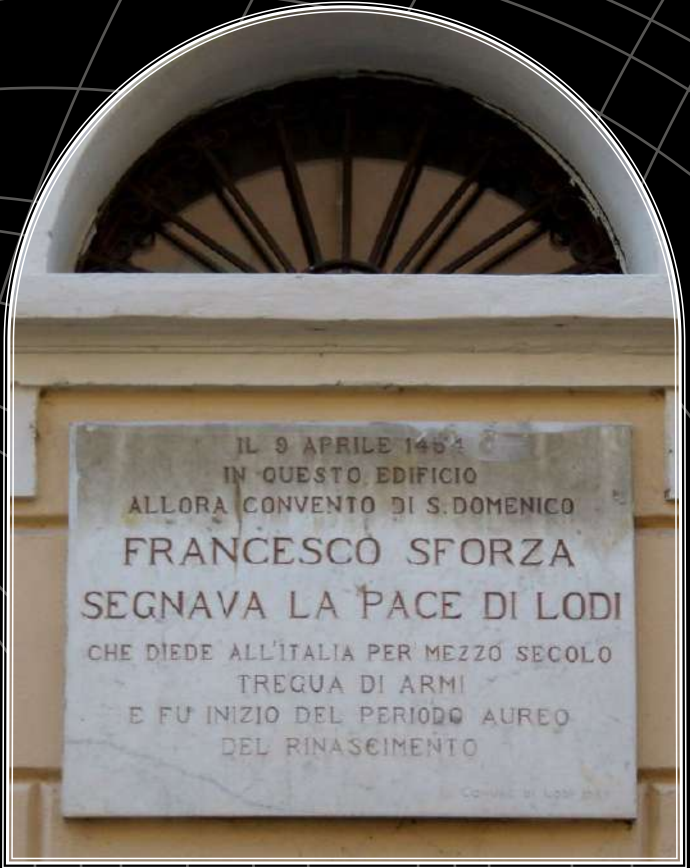
Impressed by the nautical discoveries of Dias, Christopher Columbus accepted that Ptolemy's map was incorrect and that it overestimated the size of Asia. However, if Ptolemy's estimate of the circumference of the world was correct, he reasoned that a voyage to Asia that sailed westwards from Europe would be shorter than the south-eastern route taken by the Portuguese. Had Columbus realised that the distance from the Canary Islands to Japan was 20,000 km instead of the 3,700 km that he calculated, then he might never have set off on his fateful voyage in 1492.

Financed by the Castilian crown, Columbus departed Palos in southern Spain on 2 August 1492 in command of 90 men and three ships and finally sighted the Bahamas two months later. Eager to set sail for another large island, Columbus stumbled across what he initially believed to be Japan, but what was, in fact, Cuba. After skirting along the coast of Cuba and Haiti, Columbus grounded his flagship and headed home carrying a modest amount of gold and several kidnapped natives. Upon his return, Columbus's discovery of America was met with a diplomatic storm – not because he had discovered a 'New World' (Columbus still believed he had discovered the East by sailing west), but because his Castilian-backed expedition breached an earlier agreement that guaranteed the Portuguese had the monopoly on all territories discovered beyond Guinea.

> "Eager to set sail for another large island, Columbus stumbled upon what he initially believed to be Japan, but what was, in fact, Cuba"



Columbus's discovery of America happened by accident when he attempted to reach Asia by sailing to the west



SELF-GOVERNING STATES

After the fall of the Roman Empire in 500, the power of the Catholic Church began to diminish too, yet the model of power – that consisted of a political head (the Holy Roman Emperor) and a spiritual head (the pope of the Catholic Church) – remained during the Medieval era. However, conflicts between the two developed with the church attempting to 'trump' the emperor's supremacy over the state as well as administering the Catholic Church by claiming responsibility for the souls of the people, including those who ruled. This was at odds with the secular rulers who sought to protect and expand their power within their territory.

The struggle for power between the popes and the emperors allowed Italian towns to expand their power and independence. As Italy became a hub of international trading, city-states such as Florence and Venice become very rich and soon powerful families emerged to control the commerce and banking – families that often had small mercenary armies at their disposal to enforce their control. By the 14th century five states controlled all of Italy but no one was strong enough to take control of the others and when the Visconti family of Milan attempted to audaciously expand to the south, the other four territories united against the move. These five territories continued to exist in relative peace until 1454 when the Peace of Lodi agreement was signed that allowed the territories to achieve a balance of power and act as independent sovereign nations. In 1494, the allure of Italy's wealth proved too strong for the French King Charles VIII and his armies marched on Italy. Spain followed suit and the battles continued until 1559 when Spain finally gained control over the peninsula, ending the independence of the Italian people. One of the outcomes of this war was that northern Europeans were exposed to the attitudes and accomplishments of Renaissance Italy.

The Peace of Lodi agreement allowed the Italian territories to achieve a balance of power and act as independent sovereign nations

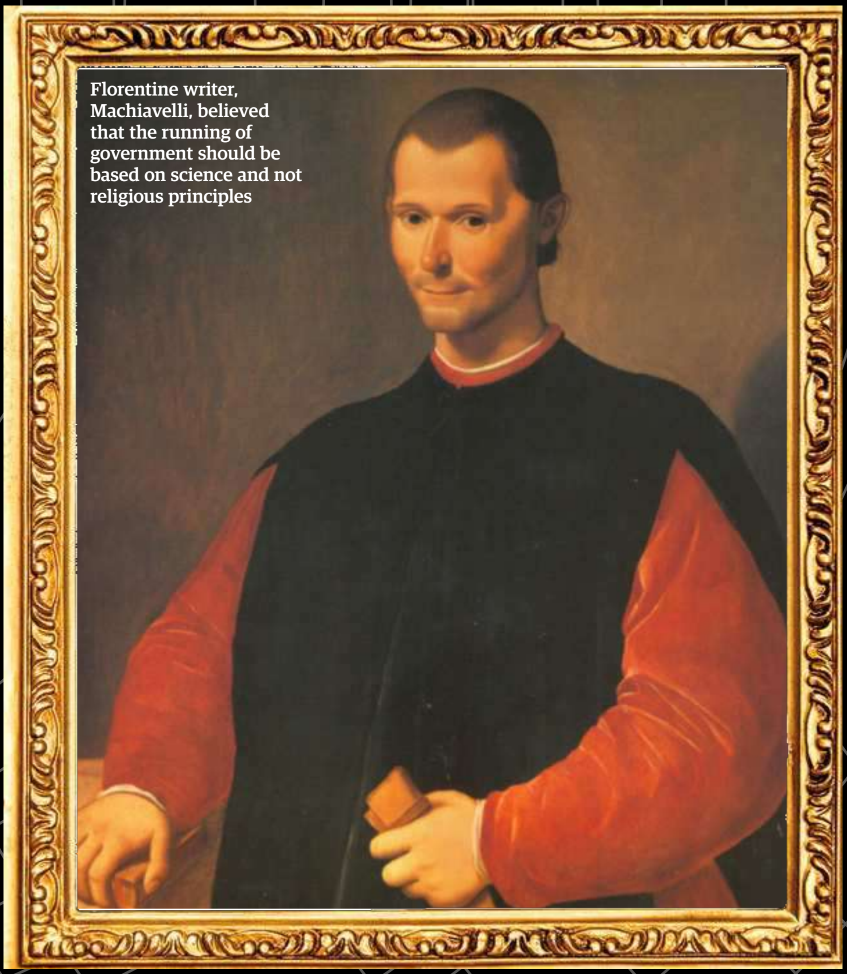
PUTTING RELIGION IN ITS PLACE

Renaissance humanists believed that any progress that took place in culture and politics should be a natural event and not influenced by divine control. What's more, they firmly believed that politics should be completely separate from religion, a theory that was championed by Machiavelli, one of the most famous Florentine writers.

Machiavelli constructed a belief that government and the process of running the government should be based purely on science facts, rather than taking its cue from religious principles. In his 1532 work, *Il Principe*, the writer states that the end justifies the means, a type of thinking that soon spread to the monarchies in the North. Indeed, French historian, Jean Bodin, in his work *Le Six Livres de la Republique*, proposed the theory that the authority of the national ruler should be almost unlimited.

> "Renaissance humanists... believed politics should be separate from religion"

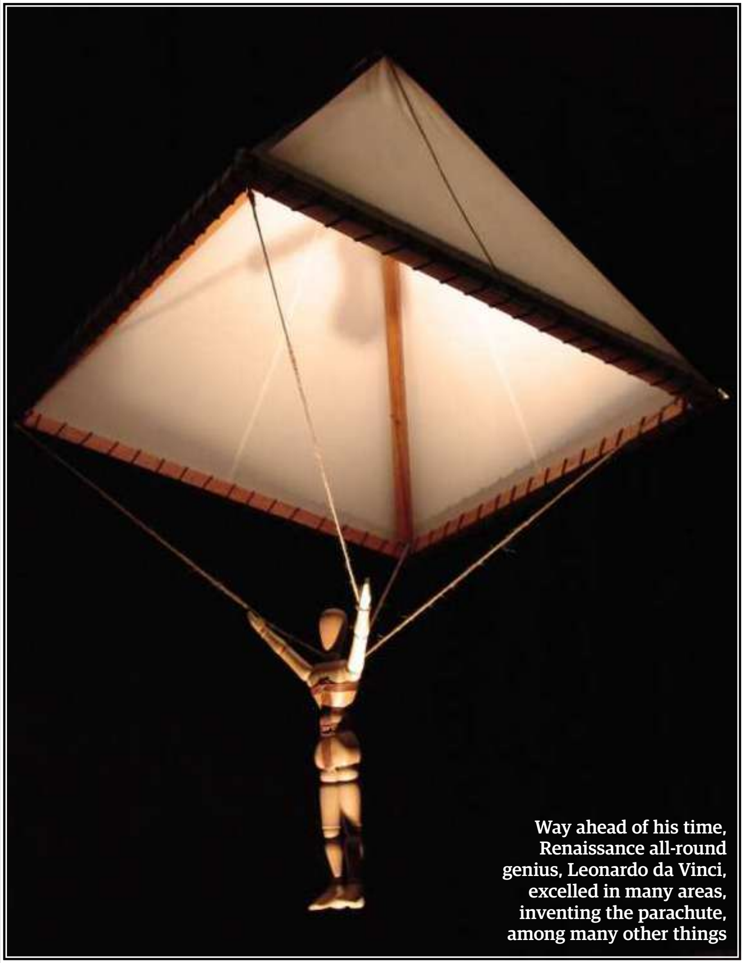
Though not everyone agreed with this theory – the church still held a lot of sway in many people's lives – the belief that the secular state that recognises no higher law than that of the preservation and continuation of its own welfare certainly originated from the great minds of the Renaissance.


Florentine writer, Machiavelli, believed that the running of government should be based on science and not religious principles

WONDROUS INVENTIONS

If Leonardo da Vinci wasn't the most talented person to flourish during the Renaissance, then the question surely begs to be asked… who was? What we know about da Vinci is that he was an architect, painter, sculptor, scientist, engineer and much more besides. He was also a very talented inventor and gifted a wealth of innovative contributions to mankind that we still use today. For example, da Vinci gave us scissors, the simple, yet vitally important cuttings tools that have aided numerous trades through the centuries. He also invented an early form of parachute that he sketched out in the 15th century and is still providing functionality and thrills the world over 500 years later. Da Vinci's design consisted of a sealed linen cloth held open by a wooden pyramid frame, although his concept would need to undergo a few alterations before it was deemed practical for use.

Some of Leonardo da Vinci's ideas in the field of engineering were also wildly innovative, though not necessarily feasible at the time they were originally conceived. An example of this is his concept for a bridge that remained in sketch form in one of his notebooks for 500 years until it was actually built in Norway in 2001 by the contemporary artist, Vebjørn Sand.



Way ahead of his time, Renaissance all-round genius, Leonardo da Vinci, excelled in many areas, inventing the parachute, among many other things

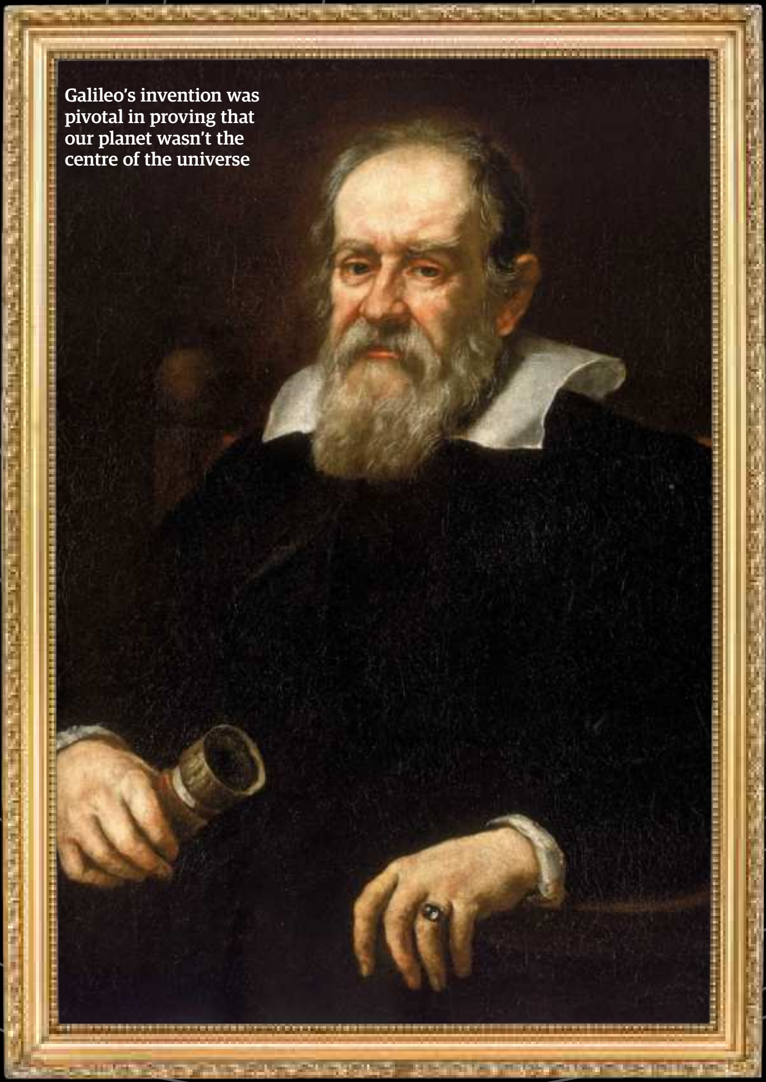
"Some of da Vinci's ideas in the field of engineering were also wildly innovative"

THE DISCOVERY OF THE GALAXY

Though he didn't invent the device (credit for that goes to Dutch astrologer, Hans Lippershey the previous year), on a swelteringly hot day in 1609, the Senate of Venice gathered to behold the remarkable scientific instrument built by the famous philosopher and astronomer from Pisa, Galileo Galilei, and that tool of wonder was the telescope.

In fact, Galileo had actually improved on Lippershey's original design, by adding a variable-focus that could increase the size of the observed object by up to eight times.

Galileo's telescope completely revolutionised astronomical observation, adding weight to Copernicus's theory that our Earth is just one of a number of planets revolving around the Sun. Convinced that Copernicus was right, Galileo suffered the full wrath of the Roman Catholic Church for voicing his findings. A published defence of his views landed him in front of the Inquisition in 1632, which found him guilty and placed him under house arrest in his home outside Florence, where he died ten years later. Amazingly, it wasn't until 1992 that the church formally acknowledged that Galileo's views were right all along. The fact that we continue to explore our galaxy using ultra modernised versions of Galileo's design demonstrates the importance of his creation, for he was a Renaissance man who not only reached for the stars, but found them.



Galileo's invention was pivotal in proving that our planet wasn't the centre of the universe

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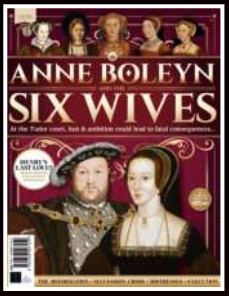
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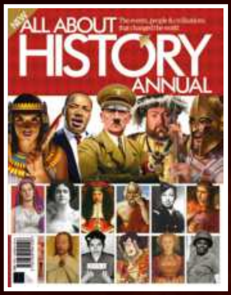
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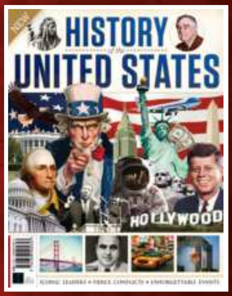
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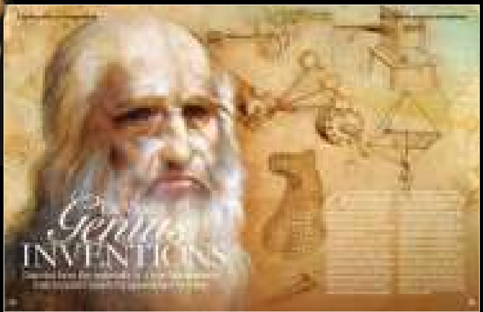
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